DECEMBER, 1962 • 35¢

AMERICAN Cinematographer

Magazine Of Motion Picture Photography And Production Techniques

Special In This Issue

- PLANNING WITH STORYBOARDS — Pg. 724
- ELECTRONIC FILM EDITING — Pg. 730
- WHAT'S NEW IN TAPE RECORDERS — Pg. 738
- SHOESTRING MOVIE MAKERS — Pg. 732
- AIR FORCE FILMING PROJECT — Pg. 736
- EDUCATIONAL FILM PRODUCTION — Pg. 741
- REFLEX CAMERA IN CINEMICROANALYSIS — Pg. 728

Special in This Issue
EQUIPMENT RENTAL DIRECTORY

A NATIONAL INSTITUTION

W. J. GERMAN, Inc.

BIGGEST AND OLDEST AGENCY FOR

Sales And Distribution

EASTMAN PROFESSIONAL MOTION PICTURE FILMS

Negatives Positives

Color Black - And - White

Prompt Service — Everywhere

Fort Lee, New Jersey

Chicago, Illinois

Hollywood, California

ARRIFLEX at work — ONE OF A SERIES*

ARRIFLEX® "chases" the X-15 at North American Aviation

In the hands of North American's photographic team, Arriflex motion picture cameras share one of the most dramatic assignments of all time . . . film coverage of the X-15's history-making flights. Tracking the supersonic aircraft — from chase-plane or ground positions — is sure and precise with an Arriflex. Its reflex viewing system gives the cameraman a direct, brilliant, and continuous through-the-lens image of his subject. He can follow-focus critically . . . frame his target with positive accuracy. And on the projection screen, his footage is consistently sharp and rock-steady. Arriflex . . . a capable match for the fabulous dynamics of aerospace research!

From the microscope to the missile range . . . from spot locations to sound stages . . . Arriflex professional motion picture cameras are the dominant choice of filmmakers in science, industry, and entertainment. They're lightweight, rugged, tremendously versatile — uniquely suited to a range of applications virtually without limits. Here are some of the features that give Arriflex cameras their remarkable capabilities:

• MIRROR-SHUTTER REFLEX VIEWFINDER • REGISTRATION-PIN FILM MOVEMENT • 21°-DIVERGENCE 3-LENS TURRET • CONTOUR HAND GRIP • FRAMES-PER-SECOND TACHOMETER • COMPLETE ACCESSORY SYSTEM . . lenses, standard and special-purpose electric drives, power supplies, time-lapse equipment, film magazines, sound blimps, tripods.

WRITE FOR NEW CATALOG

***YOU ARE INVITED** to send us a description of **your** special use of Arriflex equipment.

ARRIFLEX CORPORATION OF AMERICA | 257 PARK AVENUE SOUTH, NEW YORK 10, N. Y.

CAMERA MART END OF YEAR SALE

A BLUE RIBBON SPECIAL
Complete Sound Recording and Dubbing Studio Equipment Package

MAGNASYNC 602E22 two dubbers rack-mounted, complete with **MAGNASYNC 602E5** recorder and amplifier with interlock motor, **MAGNASYNC M434** control panel, **MAGNASYNC G924** mixer, cables, **BELL & HOWELL 385** sound projector with interlock motor, custom-built erase head installed in recorder for continuous loop recording, Altec 639A mike, speaker with case

All like new, value over $8,000.00
SPECIAL $5,895.00

MAGNASYNC model 602E two case magnetic recorder and amplifier, completely reconditioned, value over $1500 Special **$1,195.00**

MAGNASYNC model G924 three channel mixing amplifier with hi-level input, list $395.00. Exceptionally fine. Special **$295.00**

MAGNEMITE model 610C portable battery-operated tape recorder, dual 3-3/4" track, mike, headset, list $255 Completely reconditioned, specially reduced to **$95.00**

PROJECTORS

BELL & HOWELL model 179 sound projector with separate 12' speaker, excellent condition **$225.00**

BELL & HOWELL model 185 sound projector with built-in detachable speaker, exceptionally fine condition, special **$275.00**

BELL & HOWELL model 399K Specialist sound projector with analyst single-frame crank and counter, hours counter, in "like new" condition **$425.00**

BELL & HOWELL power amplifier and speaker, like new, **$69.50**

HOLMES 35mm sound projector, 2000-ft capacity, 1000-watt lamp, 4" lens, sound head, less amplifier and speaker **$175.00**

All prices are fob, New York

Listings Continued on Pages 708 and 710

the **CAMERA • MART,** inc
1845 BROADWAY AT 60TH ST.
NEW YORK 23, NEW YORK
PLAZA 7-6977

AMERICAN
Cinematographer
INTERNATIONAL JOURNAL OF MOTION PICTURE PHOTOGRAPHY AND PRODUCTION TECHNIQUES

DECEMBER, 1962 Vol 43 No 12

FEATURES

8mm For TV News Reparting 722
Plotting Camera Angles With Storyboards 724
Advontages of Reflex Camero In Cinemicroonolysis 728
Electronic Film Editing 730
Shoestring Movie Makers 732
Annual Equipment Rentol Directory 734
Air Force Filming Project 736
Whot's New In Tape Recorders 738
Some Aspects of Educationol Film Production 741

DEPARTMENTS

Industry News 708
Hollywood Bulletin Boord 710
What's New In Equipment, Accessories, Services 712
Behind The Comeras 716
Technical Questions & Answers 720
Addresses of Equipment Rentol Sources 756
Annual Index 762
Advertisers' Index 764

ARTHUR E. GAVIN, Editor
MARION HUTCHINS, Editorial Assistant

OFFICES—Editorial and Business 1782 No Orange Drive, Hollywood 28, Calif Telephone HOllywood 7 2135 EASTERN ADVERTISING REPRESENTATIVE Paul Gilbert, 489 Fifth Avenue, New York 17 N Y Telephone AX 1 5641

AMERICAN CINEMATOGRAPHER established 1920, is published monthly by the A S C Agency Inc, 1782 N Orange Dr Hollywood 28, Calif SUBSCRIPTIONS United States and Canada $4.00 per year Foreign, including Pan American Union $5.00 per year Single copies 35 cents back numbers 45 cents foreign single copies 45 cents back numbers, 55 cents Advertising rates on applicat on

Copyright 1962 by A S C Agency, Inc
Second class postage paid at Los Angeles California

CECO* professional jr.

Tripod with heavy duty grooved Tripod Legs

Standard Equipment for all Famous CECO Pro Jr. Tripod Heads

Pro Jr Tripod is better than ever with new Heavy Duty Grooved tripod leg design. Assures greater rigidity, no matter how far legs are extended. Heavy Duty Groove design guarantees herculean gripping power, because there's almost twice the gripping surface. Modern, rounded leg shape adds strength and durability to the wood. Comes equipped with indispensible double knob leg locks which assure equal pressure on each leg. Available with new ball joint swivel or standard base plate.

When you are looking for the best in a tripod, buy Professional Junior—*the tripod designed with the professional in mind!*

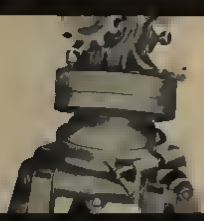
CECO Pro Jr. Friction Head with Ball Joint Swivel

Allows really fast, easy leveling without adjusting tripod legs. Fits any Pro Jr Tripod with adapter base plate. Has same exclusive features as standard Pro Jr Friction head . . . Pan & Tilt tension controls, accessible camera mounting knob, adjustable interchangeable telescoping pan handle. Skilfully designed and engineered for long dependable service. Unconditionally guaranteed—*the World's Standard of Tripod Quality!*

CECO Pro Jr. Fluid Head

The tripod head with smooth-as-silk maneuverability. Silicone fluid unaffected by extreme temperature range. Won't dive in locked position. Guaranteed leakproof. *The undisputed performance champ!*

*CECO — trademark of Camera Equipment CO



CECO Ball Socket Swivel Joint Adapter For Pro Jr. Tripod Heads

A one piece adapter which fits quickly, easily on to any Pro Jr Head. For use on new swivel base tripod or standard Pro Jr tripod with ball socket adapter base plate.

CAMERA EQUIPMENT CO., INC.

A SUBSIDIARY OF CECO INDUSTRIES, INC

- **NEW YORK, N. Y.**
  315 West 43rd St • JUdson 6-1420
- **HIALEAH, FLORIDA**
  51 East 10th Ave • TUxedo 8-4604
- **HOLLYWOOD, CALIFORNIA**
  6510 Santa Monica Blvd. • HOllywood 9-8321

CAMERA MART END OF YEAR SALE

LIGHTING EQUIPMENT

COLORTRAN SPOT KIT with 3 spot heads, one broad, four stands, snoots, scrims, case, Junior Mark II converter. Value over $325.00. Specially offered at $225.00

COLORTRAN Junior Kit with two Jr. heads and stands, case, Junior Mark II converter. Value $275.00. Specially offered at $175.00

REGAL converter 2000-watt capacity ideal for animation stands. List $65.00. Special $49.50

GARNELITE converter for 4 PAR-56 300-watt lamps, individual rheostat control for each light. List $145.00. Specially priced at $89.50

FREZZOLITE model 210 portable newsreel light with reflector, power pack, charger. List $250.00 new. Special $179.50

BARDWELL 2KW spots $ 95.00

BARDWELL 5KW spots 145.00

CONE LIGHT 2KW 75.00

MOLE single broad 35.00

MOLE double broad 65.00

MISCELLANEOUS

BELL & HOWELL 35mm model D printers, semi-automatic, 21 light scene changes, 5 aperture gate. Excellent. Value over $4,000.00. Specially offered at $1,795.00

NEUMADE 16/35mm film cleaning machines, motor drive, list $350. Special $95.00

YOLO Automatic disolve for Cine Special, 40 frames, simple installation. Brand new, list $45.00. Special $32.50

NCE collapsible aluminum slate and clapstick, insert numbers. Brand new. List $40.00. Specially priced at $29.95

CAMERA MAGAZINES

MITCHELL 1000' x 35mm magazines, list $205.00. Brand new, special $110.00

Used, special 89.50

400' x 35mm, used 49.50

BELL & HOWELL 1000' x 35mm

Like new $110.00

Used 89.50

Eyemo 400'x35mm

Like new 69.50

Used 39.50

ARRIFLEX magazines:

200' x 35mm, list $148.00 used, special $39.50

400' x 35mm, list $210.00 used, special 99.50

Cineflex, 400' x 35mm $29.50

200' x 35mm 14.95

All prices are fob, New York

Listings Continued on Pages 706 and 710

the CAMERA • MART, inc.

1845 BROADWAY AT 60TH ST.

NEW YORK 23, NEW YORK

PLAZA 7-6977

INDUSTRY NEWS

News briefs of industry activities, products and progress

New Cinematographer Societies

Recently organized cinematographer societies include the Swedish Society of Cinematographers (Forenmigen Sveriges Filmfotografer), Solna, Sweden and Asociacion Venezolana de Camarografos—or AVC—the Venezuelan cinematographers' society.

The Swedish society is direct result of suggestion made to local cinematographer by Lester Shorr, ASC, when he visited Sweden several months ago, according to FSF's Rune Ericson, who reports members now number 53 studio employed or freelance cameramen.

To establish minimum pay scales and regulate basic structure of camera crews are two of the fundamental aims of the Venezuelan society, which also functions as a cameramen's union, according to Leo Ozols, AVC spokesman.

•

New ASC Members Elected

Four directors of photography were elected to Active Membership in the American Society of Cinematographers last month. They are Dale Deverman, William Spencer, and Norman Alley of Hollywood, and Morris Hartzband of New York City.

Hartzband photographs "The Defenders" TV show for Filmways. Norman Alley, veteran newsreel cameraman, is Western Manager in charge of photography for Hearst Metrotone News. William Spencer is a director of photography at MGM. Dale Deverman is a veteran director of photography, also at MGM where he started work as an office boy 38 years ago.

•

Floyd Jackman Passes

Hollywood's cinematographic fraternity is mourning the passing of Dr. Floyd Jackman, ASC, who died suddenly at his North Hollywood home November 30. Floyd Jackman joined the ASC early in 1922 at which time he was a freelance cinematographer, working mostly for Mack Sennett, Hal Roach and Fox. Earlier he had studied dentistry, and in February, 1929, he decided to make dentistry his career and subsequently resigned his active membership in the ASC. He continued, however, as an Associate Member and was presented with a gold membership card by the Society on September 26, 1955 commemorating his 25th year as a member.

Hal Mohr Addresses SMPTE Regional Meet in S.F.

Hal Mohr, ASC, was guest speaker at the SMPTE's San Francisco Chapter's October meeting, held in the broadcasting studios of KGO. Mohr, a veteran cinematographer who did much of his early-day shooting in and around San Francisco, talked on the "Pioneer Days of Film Making in San Francisco." Following his talk, a print of Warner Brother's first "talkie," "The Jazz Singer," was screened. The film was also the industry's first feature production in sound, and was photographed by Mohr.

•

Lipow Now G.M. at Camera Mart

Charles Lipow has been named general manager of The Camera Mart, Inc., east coast distributors of motion picture equipment. Prior to joining the recently reorganized "Camart" organization, Lipow was an account executive with Related Arts Counsellors. Earlier he had been associated with DeLuxe Laboratories, Du Art/Tri Art Laboratories and Florman & Babb.

•

Victor Duncan Promotes

Cy Plumb, who has engineered and built many unique optical and mechanical devices for motion picture use and rated one of the leading experts on Mitchell and Arriflex cameras in the mid-west, was recently appointed head of the maintenance and repair facilities of Victor Duncan & Co., Detroit. Latter company, which is situated in the Jack A. Frost building, sells, and rents professional motion picture cameras and accessories.

•

GFL's Bill Gephart Named To Top Trade Positions

William E. Gephart, Jr., President of General Film Laboratories, Hollywood, has been elected to the Board of Governors of the Society of Motion Picture and Television Engineers, and has also been named Vice-president of the Association of Cinema Laboratories.

•

"Maggie" Awards

Magnasync Corporation, North Hollywood, has embarked upon novel awards program of interest to users of the company's Magnasync magnetic

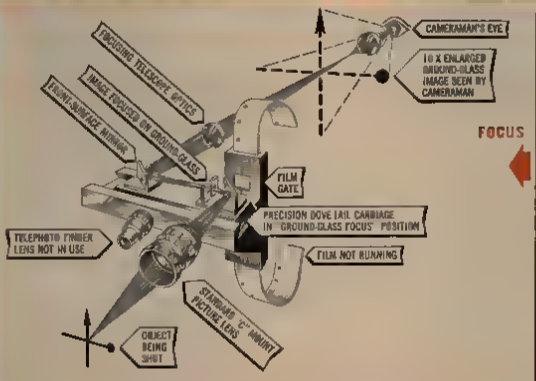
Continued on Page 756

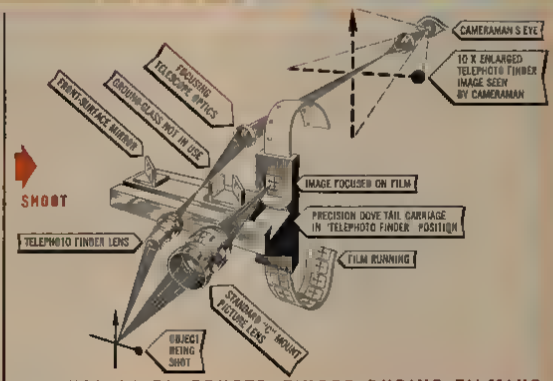
Auricon

"SUPER 1200" CAMERA

with Full-Frame Reflex Ground-Glass FOCUSING OPTICAL SYSTEM

The unique and versatile features built into the 16mm Auricon "SUPER 1200" Sound-On-Film Recording Camera have prompted Producers and Cameramen to name the Super 1200..."Finest 16mm Sound Camera ever built!" This Camera is "Self-Blimped" for whisper quiet Studio work, has 33 minutes of continuous film capacity, Variable-Shutter or Kinescope "TV-T" Recording Shutter, plus the combined "Rifle-Scope" Telephoto Finder and Reflex-Focusing Optical Systems illustrated below. Its only equal is another Auricon "Super 1200"...


CAMERAMAN'S EYE
10 X ENLARGED GROUND-GLASS IMAGE SEEN BY CAMERAMAN
FOCUSING TELESCOPIC OPTICS
IMAGE FOCUSED ON GROUND-GLASS
FRONT-SURFACE MIRROR
FILM GATE
PRECISION DOVE TAIL CARRIAGE IN "GROUND-GLASS FOCUS" POSITION
TELEPHOTO FINDER LENS NOT IN USE
FILM NOT RUNNING
STANDARD "C" MOUNT PICTURE LENS
OBJECT BEING SHOT



IN USE FOR FULL-FRAME GROUND-GLASS FOCUSING

"Super 1200" Reflex Ground-Glass Focusing-Frame indicates the field covered by any focal-length lens at all distances. A 10X enlarged Ground-Glass image is seen by the Cameraman, for needle-sharp critical focusing

IN USE AS TELEPHOTO-FINDER DURING FILMING

No Camera-weight shift on tripod legs when moving from focus to film-shooting position with the "Super 1200" Camera-body does not shift to focus, or shoot film, as Optical-System Dove Tail Carriage is only moving part!

THE CAMERA OF TOMORROW, HERE TODAY! ITS ONLY EQUAL IS ANOTHER AURICON "SUPER 1200"

FEATURES OF MODEL CM-74 CAMERA INCLUDE...

- "Rock-steady" picture and High-Fidelity Optical or "Filmagnetic" Sound-Track recorded on same film at same time, with "whisper-quiet" Camera and Sound Mechanism synchronously driven by precision-machined Nylon gears.
- Auricon all-transistorized "Filmagnetic" Sound-On-Film Recording System can be used with the "Super 1200" Camera (with or without Optical Sound-On-Film also installed in the Camera).
- "Super-1200" is Self-Blimped for completely quiet Studio use.
- Built-in Electric Camera Heater with automatic Thermostat-Control, provides reliable cold-weather Camera operation.
- Geared Footage and Frame-Counter with built-in neon-glow indirect light.
- Two independent Finder systems (in addition to Reflex Ground-Glass Focusing through the Camera lens), a brilliant upright-image Studio Finder, plus the "Rifle-Scope" precision-matched Telephoto-Finder.
- 600 and 1200 ft. film Magazines available. Up to 33 minutes of continuous filming
- During picture exposure, your film runs through the Auricon "Super 1200" Film-Gate with the light-sensitive film emulsion accurately positioned on jewel-hard Sapphire Surfaces, an exclusive Bach Auricon feature (U.S. Patent No. 2,506,765). This polished Sapphire Film-Gate is guaranteed frictionless and wear-proof for in-focus and scratch-free pictures, regardless of how much film you run through the Camera!
- Priced from $4,149.00 for Double-System Recording; choice of "C" Mount lenses and Carrying Cases extra.
- Sold with a 30 day money-back Guarantee and One Year Service Guarantee, you must be satisfied! Write today for your free copy of the 74 page Catalog describing all Auricon Equipment.

BACH Auricon

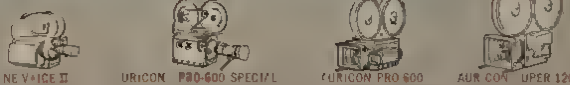
GUARANTEE

All Auricon Equipment is sold with a 30 day money back Guarantee and a 1 year Service Warranty. You must be satisfied!

BACH AURICON, Inc.

6902 Romaine St., Hollywood 38, Calif. • HO 2-0931

THE BACH Auricon LINE OF 16MM SOUND-ON-FILM CAMERAS



CINE-VOICE II
100 ft. Runs 2 min
$997.00

AURICON PRO-600 SPECIAL
400 ft. Runs 11 min
$1,8[illegible]0.00

AURICON PRO 600
600 ft. Runs 16 min
$2,1[illegible]

AURICON SUPER 1200
1200 ft. Runs 33 min
$4,[illegible]

THE PROFESSIONAL CAMERA • STANDARD OF THE 16MM SOUND INDUSTRY SINCE 1931

CAMERA MART END OF YEAR SALE

35mm CAMERAS

MITCHELL 35mm Standard, completely reconditioned, 2-1000' mags, matte box, 110v sync motor, 12v wild motor, 40,50,75, 100mm Baltar coated lenses, viewfinder, cases Value over $10,000. Exceptionally fine, $4,995.00

BELL & HOWELL Standard, unit I and hi-speed shuttles, 3-400' mags, 110v AC-DC motor, 4 lenses, cases, value over $4500. Excellent, reduced to $1,895.00

DEBRIE SUPER PARVO blimped studio camera, 220v 3-phase sync motor, 6 Kinoptik lenses, finder, mags, tripod, cases, with 220-110v reverter and power regulator, value over $7000 Special $3,495.00

ARRIFLEX Model IIB, 16v motor, sunshade, 2-200' mags, 28,50,75mm Schneider lenses, battery, case, value over $3000. Special $1,995.00

ARRIFLEX Model I, 12v motor, sunshade, 2-200' mags, 3 lenses, battery, case, value over $1200 Specially priced at $750.00

CINEKAD blimp and sync motor for Arriflex model I camera, follow focus, originally over $1500 Good condition $450.00

CINEFLEX 35mm reflex camera, 12v motor, 3 lenses, 2-200' mags, case, excellent $395.00

TOBIS SCHLECTA studio camera, 220v motor, 3-400' mags, prismatic rackover, 28,50,100mm lenses, value over $2000. Specially reduced to $395.00

16mm CAMERAS

AURICON SUPER-1200 Sound camera, variable shutter with TV kine attachment, auto-parallax finder, variable den. galvo, amplifier, mika, headset, cables, 2-1200' mags, tripod, case, mag case. Value over $6500 Exceptionally fine, $4,595.00

BERNDT-MAURER professional camera, 2-400' mags, finder, sunshade, sync motor, registration pin movement, prismatic rackover. Value over $3,000. Special $995.00

J. A. MAURER type 05 camera, 1-400' mag, finder, sunshade, sync motor, 24fps DC motor, rackover. Value over $6,000 Special $1,995.00

CINE SPECIAL model II, 100-ft chamber, 25mm Ektar f/1.4 lens, excellent condition $595.00

CINE SPECIAL 100 chamber late type, excellent $145.00

200' chamber, less finder 250.00

All prices are fob, New York

the **CAMERA • MART,** inc.

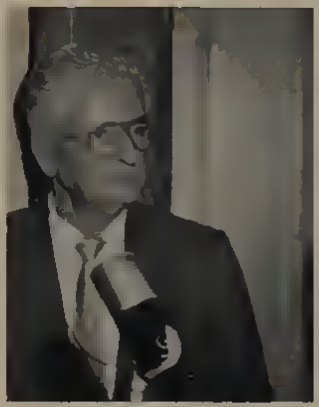
1845 BROADWAY AT 60TH ST.

NEW YORK 23, NEW YORK

PLAZA 7-6977

HOLLYWOOD BULLETIN BOARD

Camera and Equipment Demonstrations Highlight ASC's November Meeting



WILLIAM DANIELS, ASC President, who presided at the Society's lively November dinner-meeting, calls attention to equipment displays which were a highlight of the program.

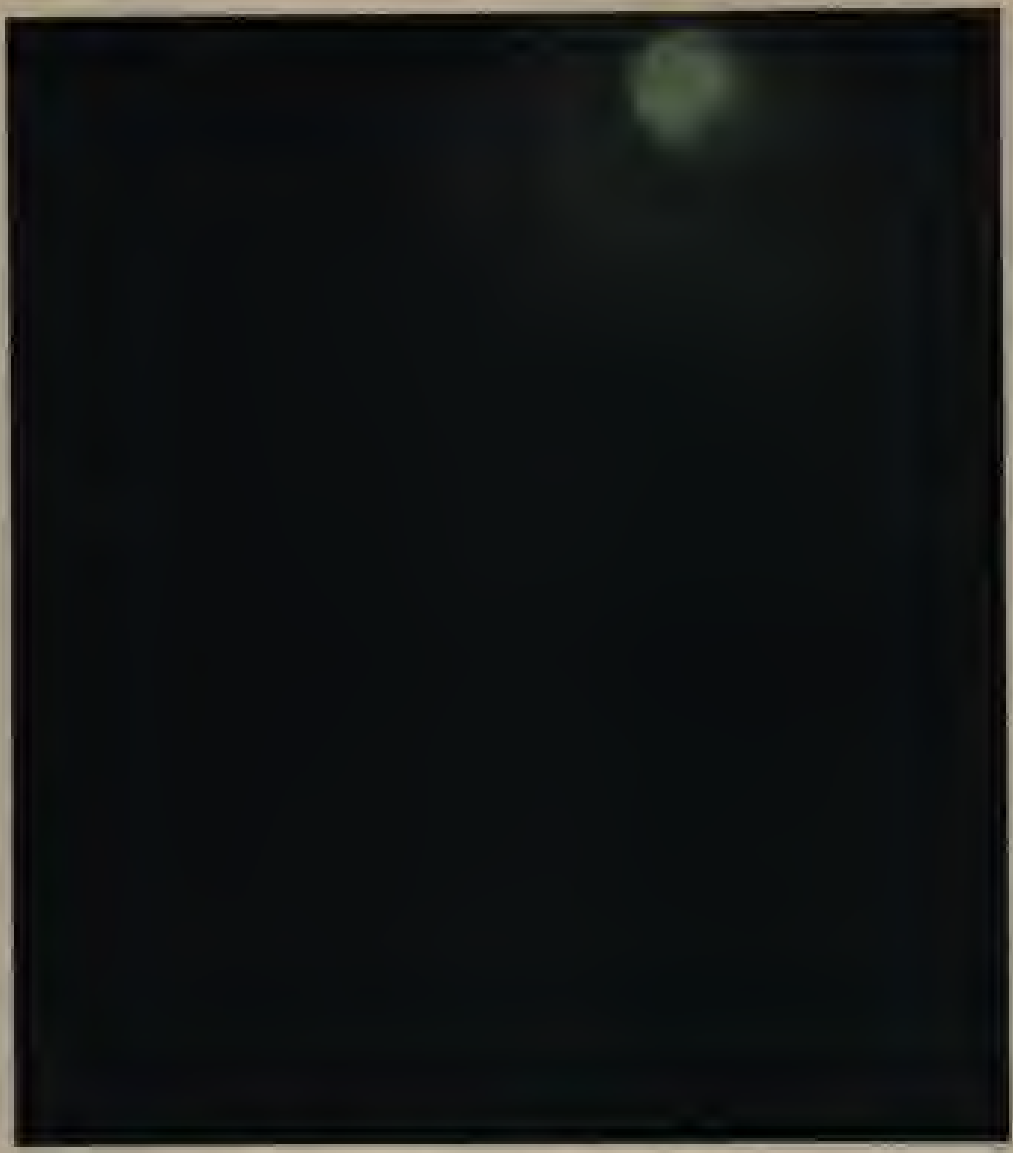
WALTER KLINGER (right) demonstrates new Fisher crab dolly to (from left) Arthur Arling, Ellis Carter, Lester Shorr, James Fisher, and Arthur Edeson Fisher is designer and builder of the dolly which features hydraulic boom

RICHARD GLICKMAN of ColorTran industries (2nd from right) demonstrates company's new Quartz light to (from left) Dan Norwood, Arthur Edeson and Lucian Andriot

HAL MOHR, Lee Garmes and Ray Johnson discuss merits of the new Mitchell Mark II Reflex camera being demonstrated by Mitchell's Charles Austin (behind Garmes)

WILLIAM MARGULIES and Ed Colman welcome new member Dale Davenmon (right) to the ASC. Davenman photographs "The Eleventh Hour" TV film series of MGM Margulies photographs various TV film series at Revue Studios, and Ed Colman, long a member of Walt Disney's stable of cinematographers, is currently shooting "Savage Sam" at that studio

ASC's NOVEMBER meeting was occasion for William J Garmes (right), re-visiting Hollywood to renew acquaintances with many friends among ASC members As he reminisces with Lee Tavar, ASC-Prexy Bill Daniels (rear) chats with ColorTran's Richard Glickman



Night Life in Hollywood

There's action all night at General Film, in Hollywood. Our 24-hour operation gets your motion-picture footage started fast and finished well and soon. We do front end work on 16mm and 35mm, color and black and white; and release prints in 35mm, 16mm, and 8mm, color or black and white. Send for our new 12-page price list, just off the press. You should have one on file.

GENERAL
FILM LABORATORIES
A DIVISION OF PACIFIC INDUSTRIES INC

1546 N Argyle, Hollywood 28, California, HOllywood 2-6171 / central division, 1828 Walnut St., Kansas City 8, Mo., GRand 1-0044

VICAUDIO

SELLS, TRAINS, TEACHES WITH THE EXCITEMENT OF FULL-COLOR 8mm SOUND FILMS!

This is the new VICAUDIO COMPACT SOUND 8 CARRY ALL PROJECTOR... the remarkable lightweight rear screen projector in an attache case! With VICAUDIO, new professional quality 8mm sound movies open a new dimension in audio-visual communication. Magnetic sound with its flexibility... 8mm film with its amazing production savings...loop-loading with its repeat-message possibilities...all combine in the VICAUDIO. May we send you the full story on 8mm sound and the equipment which brings it to reality?

VICOM, INC.

FL-81A

A SUBSIDIARY OF ELGEET OPTICAL COMPANY
309 CHILD STREET, ROCHESTER 6, NEW YORK

WHAT'S NEW

IN EQUIPMENT, ACCESSORIES, SERVICES

Mitchell Dual-ratio Finder

Mitchell Studio viewfinders are now available with two sets of horizontal matte vanes, instead of standard single set. This sealed additional built-in advantage, controlled by a third knob on the right side of the finder, eliminates the necessity for cutting into the finder housing to accomodate plastic mattes.

The new Mitchell D-R viewfinder provides the camera operator with an efficient means for composing for two aspect ratios (i.e., Academy and Television, or 1.85-to-1 and Academy), when the possibility of this type of a picture release occurs, and assists him to achieve a better balance. Manufacturer is Mitchell Camera Corporation, 666 W. Harvard St., Glendale, California.

Cine Liquid Concentrate

A new all liquid system for preparing reversal processing solutions in one-step is now available from the Philip A. Hunt Company of Palisades Park, N.J. Four cine reversal solutions are supplied as concentrates in five gallon polyethylene cubitainers. Diluted 1/3, each cube makes 20 gallons. All mixing of bulk chemicals from bottles, bags and drums is eliminated.

New Elgeet Zoom Lens

The Elgeet Optical Co., 303 Child St., Rochester 11, New York, announces the Elgeet Zoom Navitar lenses for 16mm and television cameras. The fourteen-element lens features a zoom range from 20mm to 80mm and a maximum speed of f/1.8. This 4-to-1 lens gives the photographer a wide-angle capability and a telephoto range up to more than 3X, making the Zoom Navitar an ideal replacement for 1-, 2- and 3 inch lenses.

The new Zoom Navitar is of rugged construction and has a lightweight cast aluminum design. The zoom action is linear, achieved by means of a ring with a push-pull action permitting total optical centering without need for cams.

The lens has a diaphragm range from f/1.8 to f/16 and focuses from 5-feet to infinity. It is optically compensated so that it holds sharp focus through the entire zoom range. Its coverage has been specifically designed to allow use in standard 16mm mounts as well as in the 1/2"x3/8" standard vidicon television television camera format. The unit comes complete with a screw-in front lens cap and a zoom ring lock screw. List price is $400.00.

Vari-focal Lens

Traid Corporation, Encino, Calif., announces the new Traid-Berthiot variable focal length lens that features a zooming range from 23mm to 115mm. The lens, pictured above mounted on a KB-3A gun camera, takes all "C" mounts and all elements are coated.

Lilliput Twin Lamp

Florman & Babb, Inc., 68 West 45th Street, New York 36, N.Y., is distributor of the new Lilliput Twin Lighting Unit manufactured by Kliegl Bros. Lamp delivers the same intensity flood lighting as a 5KW Fresnel without requiring transformer. The Lilliput-Twin

Continued on Page 714

in the east . . . it's

MOVIELAB

for color* and black & white

MOVIELAB

MOVIELAB FILM LABORATORIES
MOVIELAB BUILDING, 619 W. 54th ST.
NEW YORK 19, N.Y. JUDSON 6-0360

*developing color negatives • additive color printing • reduction printing including A & B • color slide film processing • blowups • internegatives • Kodachrome scene-to-scene color balanced printing • Ektachrome developing and printing • registration printing • plus complete black and white facilities including cutting rooms, storage rooms and the finest screening facilities in the east.

Setting new Standards...

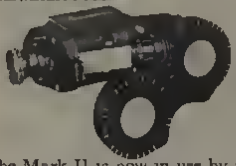
MARK II REFLEX

Streamlined lightweight 35MM camera with designed-in reflex finder and well-known professionally required Mitchell features

STUDIO OR LOCATION PRODUCTION CAMERA ..

Here is a new kind of 35mm camera—the only professional Reflex whose advanced and unique features and capabilities are *designed-into* the camera The unusual Mark II reflects state-of-the-art camera technology breakthroughs, the result of the most intensive research, development and testing program in modern camera engineering Designed as an advanced studio production camera that easily adapts to hand-held filming, the Mark II provides long-awaited freedom in use and operation of the camera for virtually every conceivable professional filming requirement. Over 45 years of experience plus Mitchell's internationally known workmanship make the Mark II 35mm Reflex an engineering triumph

PLUS HAND-HELD FLEXIBILITY...



MARK II APPLICATIONS:

Feature Productions and Theatrical Short Subjects in all 35mm aspect ratios,
Television Features and Commercials;
Special Effects and Background-Plate Films,
Documentary and Industrial Films,
Scientific and Research Cinematography;
Photo-Instrumentation and High-Speed Cinematography.

The Mark II is now in use by major theatrical and television producers and distinguished cinematographers throughout the world Priority of delivery will be scheduled from date of order For literature and information on field demonstrations write on your letterhead to the Mitchell Sales Department

MITCHELL
CAMERA CORPORATION
666 W HARVARD ST., GLENDALE, CALIFORNIA
521 FIFTH AVENUE, NEW YORK, NEW YORK

AGENTS Vintan Mitchell Ltd 715 Harth Circular Rd London N W 2 England
Nagase & Co Ltd 3, 2-Chome Kabunacho Nihonbashi, Chuaku Tokyo, Japan

WHAT'S NEW

Continued from Page 712

uses the new 16-hour GE Sealed-Beam Quartz-Iodine Umflood Lamp and comes equipped with a dim-bright device and barn doors. The sockets swivel to permit use of lamp in either horizontal or vertical positions and a single light beam can be achieved through a special adjustment device The Lilliput Twin (without lamps) is priced at $115.00. The Quartz-Iodine lamps are $9 95 each

Cine Voica Conversion

A new type conversion of the Auricon Cine Voice camera that provides 100-foot film capacity is announced by Professional Cine Products, 2222 No Prairie Ave., Dallas 4, Texas. Features include cut-off camera top to accommodate 400-ft magazine and also reduce camera size and weight, external, adjustable clutch for positive takeup control without need for extra motor, built-in, silenced Veeder-Root footage counter; phone jack (optical models only); and filter slot Price of conversion, less magazine, is $445 00

Wide-aperture Data Gate

L-W Photo, Inc., manufacturer of cine pulse cameras and stop motion projectors, has developed a wide-aperture plate for projectors to make possible the viewing of timing marks or other data recorded on film outside the sprocket holes. The plate permits viewing data on either side of the gate to accommodate data filmed with various types of wide aperture systems

Complete technical data is available from L-W Photo, Inc., 15451 Cabrito Road, Van Nuys, Calif ■

F&B TALKS ABOUT TRIPODS!

F & B Mark III with Viscomatic Head

Sachtler-Wolf Double Gyro Model UK

Sachtler-Wolf Double Gyro Model KA

O'Connor Model C

O'Connor Model 100

Miller Model D

Miller Professional

N.C.E. Hydro-Fluid

Sputnick

Like some people we know, cameras don't move by themselves they have to be pushed around

A basic requirement in good camera movement is smoothness —a smooth beginning—middle and and when panning, tilting or both

Years ago, when we had to depend on friction heads for movement, most cameramen acquired great skill in using these Also many cameramen depended on geared heads cranked with both hands which required tremendous dexterity

Today, with our advancing technology, adapting principles of hydraulics and of gyroscopes we have evolved the fluid and gyro tripod heads Great skill and dexterity is no longer an absolute requirement for fine, professionally smooth camera movement Smoothness is now a built-in characteristic of each of the tripod heads shown here We at F & B sell and recommend these most enthusiastically.

If you are still doing great work with outmoded friction or geared heads, we congratulate you Still we urge you to modernize Why not treat yourself to one of these fine fluid or gyro head outfits, and see if you don't agree that it makes your work easier.

With the help of many skilled cameramen, we have made up a chart so that you could select the outfit most suited to your needs If you want more detailed information on any of these, or if you would like to "try out" or arrange for a demonstration with no obligation, please write us.

HOW TO SELECT YOUR TRIPOD

F & B MARK III VISCOMATIC	✓	✓	✓			✓	✓		✓					
MILLER 'D'	✓	✓	✓			✓	✓		✓					
MILLER PRO		✓	✓			✓	✓	✓	✓	✓	✓			
O'CONNOR C	✓	✓	✓			✓	✓		✓					
O'CONNOR 100					✓		✓	✓	✓	✓	✓	✓	✓	
O'CONNOR 200 A												✓	✓	
ACHTLER WOLF VX DLE GYRO K A				✓	✓									
ACHTLER WOLF DOUBLE GYRO U A	✓	✓	✓		✓	✓	✓	✓	✓	✓	✓			
SUTNIK					✓							✓	✓	
NCE HYDRO F		✓				✓	✓	✓	✓	✓	✓			

ASK F & B

There is nothing our expert technicians like better than talking equipment with you.

Complete information and literature on all types of professional equipment are yours for the asking

SERVING THE WORLD'S FINEST FILM MAKERS

FLORMAN & BABB, INC.

68 West 45th Street New York 36, New York MUrray Hill 2-2928

S.O.S.

BUYS MILLION DOLLAR INVENTORY!

Extra Savings for You!

Write for Complete Brochure

CAMERAS 35MM

AKELEY AUDIO from Foremount News with full complement of lenses and matched finders, 12V motor 1000' magazine, single system sound recording modulator, amplifier, microphone $10,000 originally $1995 00

AKELEY AUDIO from Foremount News with full complement of lenses and matched finders, 12V motor 1000' magazine, single system less modulator $1495 00

AKELEY NEWSREEL PANCAKE TYPE with 3 lenses and matched finders, 12V motor, 3 magazines tripod $3500 originally $195 00

ARRIFLEX I with 3 zeiss lenses—35/50/85mm 3—200' mags, 1—400' mag, Arri Tripod, 3 cases Good condition $1095 00

BELL & HOWELL 35MM 2709 RACKOVER CAMERA with Unit 1 pilot pin movement, Cooke Speed Panchro 25MM f2 lens, Astro Pan Tachar 40MM f1 8 lens, Baltar 50MM 12 3 lens, 75MM Cooke Speed Panchro 12 lens, 2 each 400'; 1000' mags, erect image viewfinder, 220V 3ph synchronous motor, matte box, sunshade $4450 00

BELL & HOWELL 35MM 2709 STANDARD CAMERA with Unit 1 pilot pin movement, 50MM Baltar 12 3 lens, Astro 75MM f2 3 lens, 2—1000' magazines Excellent condition $1995 00

BELL & HOWELL 35MM EYEMO Q complete outfit 8 to 48 fps, spider turret, 3 lenses with filters, sunshades, motor, power cable, 2—400' mags, drum finder List value over $2000 ..... $795 00

BELL & HOWELL 35MM EYEMO M complete outfit 8 to 48 fps, compact turret, 3 lenses with filters, sunshades, drum finder List value over $1500 ..... $495 00

B & H EYEMO 71A with 47MM f2 5 Cooke lens $99 50

CINEFLEX, 3 lenses 2—200' magazines, 1—400' magazine motor and case $595 00

DEBRIE Model K with 3 lenses, 4—400' magazines, metal case Direct focusing $299 50

DEBRIE HIGH SPEED with 3 lenses, 12V motor, magazines; original cost over $3000 $395 00

DEVRY NEWSREEL CAMERAS with 3 lenses 12V motor $149 50

DEVRY NEWSREEL TYPE with 2" f3 5 focusing mount lens Good condition $125 00
Same, less lens ..... $ 85 00

MITCHELL STANDARD, 4 fast lenses 2—1000' mags viewfinder, matteboxes, 2 motors— 115V wild, 110 or 220V sync; Roby Blimp Fearnhead tripod Excellent cond $6750 00

WALL complete sound outfit with RCA Galvanometer recording amplifier, fabric blimp Reconditioned $3495 00

WALL single system with 4 lens turret 2—1000' magazines 12V DC motor, viewfinder tachometer counter, case, $6 580 originally
Serviceable condition ..... $ 995 00
Reconditioned $1995 00

CAMERAS 16MM

AURICON PRO 200 with matteboxsun shade filter holder, Auto Parallax Finder, special iris attachment, less sound, in case
Good condition $395 00
Reconditioned $575 00

AURICON PRO 200 with Zoom Door Parrish conversion for 400' or 1200' Mitchell magazines Includes Modulite Galvanometer NRS 24 Amplifier less magazines Excellent condition $1195 00

BOLEX H16 with PAN CINOR 40 zoom lens 26mm f1 9 Pizer, prismatic focusser, pistol grip Very good condition $249 50

Continued on Pages 718 and 720

S.O.S. PHOTO-CINE-OPTICS, Inc.

602 West 52nd St., New York 19—Plaza 7-0440
Western Branch: 6331 Hollywood Blvd. Hollywood, Calif.

BEHIND THE CAMERAS

WHAT THE INDUSTRY'S CAMERAMEN WERE SHOOTING LAST MONTH

BY MARION HUTCHINS

NOTE: Asterisks following titles indicate television film productions.

ALLIED ARTISTS

FLOYD CROSBY, ASC, "Black Zoo" (Herman Cohen Prod., P'Vision & Eastman color) with Michael Cough and Rod Lauren. Robert Gordon, director.

BILTMORE STUDIOS — N.Y.

JACK PRIESTLY, "Naked City"* (Screen Gems).

BIOGRAPH STUDIOS — New York

GEORGE STOETZEL, ASC, "Car 54 Where Are You?"*.

CASCADE STUDIOS

HENRY FREULICH, ASC, Commercials*.

ROY SEAWRIGHT, Commercials*.

CBS—N.Y.

CHARLES MACK, LEO ROSSI, JOHN CLEMENTS, "CBS Reports"*

COLUMBIA STUDIOS

GORDON AVIL, ASC, "Mr Smith Goes to Washington"*

IRVING LIPPPMAN, "Inventory"* (pilot)

ARTHUR ARLING, ASC, Commercials*

GEORGE FOLSEY, ASC, Commercials*

JAMES DROUGHT, Commercials**

ROBERT BRONNER, ASC, "Human Comedy"* (pilot)

ROBERT WYCOFF, "Dennis the Menace"*

CHRISTOPHER CHALLIS, "The Victors" (Highroad Prod., P'Vision, shooting in England) with Vincent Edwards and Christine Kaufmann Carl Foreman, producer director

CHARLES WELBORN, "Empire"*.

JACK MARTA, RICHARD RAWLINGS, "Higgins"*

FRED GATELY, ASC, "Turning Point"* (pilot); "Hazel"*

GERT ANDERSEN, ASC, "Donna Reed Show"*.

DESILU—Cahuenga Studio

ROBERT deGRASSE, ASC, 'The Danny Thomas Show"*, 'Dick VanDyke Show"*.

MAURY GERTSMAN, ASC, "Tim Dickens—He's Fenster"*

HENRY CRONJAGER, "The Joey Bishop Show"*.

SID HICKOX, ASC, "The Andy Griffith Show"*.

DESILU—Culver City

LOTHROP WORTH, ASC, "The Real McCoy's"*.

CHARLES STRAUMER, "The Untouchables"*.

DESILU—Gower

MAURY GERTSMAN, ASC, "The Lucy Show"*.

TED VOIGHTLANDER, 'Ben Casey"*

EDWARD FITZGERALD, ASC, "Lassie"*.

ROBERT PLANCK, ASC, "My Three Sons"*

Continued on Page 718

SARTORIAL NOTE: On set for "Come Blow Your Horn," cinematographer Bill Daniels' camera crew shows off new sport shirts provided by Daniels (2nd from left) while Frank Sinatra, star of picture looks on. Shirts are replicas of those worn by girls bowling team sponsored by Bill Daniels and headed by latter's daughter. Clever insignia is that of a motion picture camera worked out with all the letters contained in the name, William Daniels, ASC. From left are Al Lane, operator, Daniels, Sinatra, and camera assistants Bill Johnson and Dewey Wrigley.

35 mm & 16 mm Eastman color
CinemaScope screening facilities
1st lab in East to utilize 35/32 method
Expanded completely equipped editorial rooms
Tripled capacity for printing and processing
2 recording studios (RCA & Westrex sound)

We Idolize Service

(THAT'S WHY WE'VE BUILT A NEW PLANT)

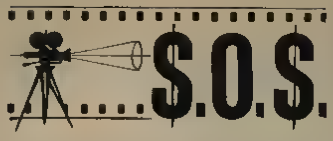
We outgrew our old quarters. The new plant offers the most modern facilities obtainable anywhere. No color job will be beyond us, no technical problem *too* technical. This is the world's newest, most modern film processing plant—and we're delighted to say "at your service."

Capital

Film Laboratories, Inc.

470 E St., S.W. • Washington 24, D.C • District 7-1717

SOUND, EDITORIAL AND ALL MOTION PICTURE LABORATORY SERVICES



CORNERS MARKET

★ Extra Values

LENSES

CORNEASCOPE 16MM Anamorphic Spread lens with 16MM projector adapter Brand new $149 50

ZOOM LENS FOR AKELEY NEWSREEL 35MM camera 14 5 focus 60MM to 350MM Matched coupled viewfinder Originally $7500 Good condition $1395 00

CAMERA ACCESSORIES

AUPICON RLIMP for Cine Special with sync motor Excellent condition $395 00

DOUBLE COMPARTMENT 35MM MAGAZINES 1000' capacity with transport mechanism and aperture gate Cost government $500 New $99 50

AKELEY GYRO Tripod with bowl and heavy duty legs Good condition $495 00

CECO GYRO Tripod Jr type legs and case Excellent condition $395 00

ANIMATION AND SPECIAL EFFECTS EQUIPMENT

ACME 7' Animation stand E/W/N/S movements, sliding pegs R & H 35MM camera, Acme Stop motion motor $3795 00

BELL & HOWELL 35MM Animation Camera with 2 lenses 2 400' or 1 1000' magazine Unit 1 Shuttle $1495 00

BELL & HOWELL 35MM Animation Camera with lens 2 400' or 1 1000' magazine unit eye shuttle prismatic through the lens focuser Excellent condition $2250 00

BELL & HOWELL 35MM Animation Camera with reckever, Unit 1 Shuttle, 3 lenses sunshade, matte box, 2 400' or 1 1000' magazine & view finder $6000 value $3995 00

LIGHT EQUIPMENT

COLORTRAN 5000 St Kit with two 5 light heads 2 stands & converter Like new $195 00

MOLE-RICHARDSON 150 amp Molaric (Type 170) on pedestal, grid & cables $2410 value $795 00

M R or R & M 5t 5000W Spots $149 50

5000W Spots on rolling stands $199 50

M R or R & M Jr 2000W Spots $79 95

2000W Spots on rolling stands $119 50

RURYLITE PORTABEE NEWSLITE with power pak in case new demonstrators $165 00

RURYLITE POWERPAK with charger Demonstrators $119 50

RECORDING EQUIPMENT

AMPEK 600 Magnetic Recorder with synchronous generator, playback amplifier and speaker in 2 matched cases $1000 value $595 00

AUPICON RT RO VA Recorder less amplification $295 00

AURICON PT RO Optical Recorder with noise reduction amplifier available VO or VA, service able condition $385 00

Reconditioned $525 00

MAURER D 16MM Optical Recorder twin track negative, 4 position mixer noise reduction amplifier 400' Magazine Excellent condition $3250 00

STANCIL-HOFFMAN complete 16MM SYNCHRONOUS MAGNET OUTFIT 16MM recorder/playback unit two S4 dummy playbacks, all with Selsyn sync motors Designed for double sprocketed center track but one playback has been adapted to single sprocketed edge track Two portable cases for recorder, motor rack for playbacks Cost over $6000 $1995 00

See Also Pages 716 and 720

Write for Complete Brochure

S.O.S. PHOTO-CINE-OPTICS, Inc.

602 West 52nd St, New York 19—Plaza 7 0440

Western Branch: 6331 Hollywood Blvd Hollywood Calif

BEHIND THE CAMERAS

Continued from Page 716

WALT DISNEY PRODUCTIONS

EDWARD COLMAN, ASC, "Savage Sam" with Brian Keith and Tommy Kirk Norman Tokar, director.

DAVID HARCOURT, "The Three Lives of Thomasina" (Technicolor, shooting in England) with Patrick McGoohan and Susan Hampshire Don Chaffey, director

WILLIAM SNYDER, ASC, "Summer Magic" (Technicolor) with Hayley Mills and Burl Ives James Neilson, director

FILMWAYS — MGM

TOM TUTWILER, ASC, "Shell's Wonderful World of Golf"*.

FILMWAYS—New York

MORRIS HARTZBAND, ASC, "The Defenders"*" (CBS) Boris Sagal and Buzz Kulick, directors

FOX WESTERN AVENUE

JAMES VAN TREES, ASC, "Dobie Gillis"*

GENERAL SERVICE STUDIOS

LESTER SHORR, ASC, "The Beverly Hillbillies"*

ROBERT MORENO, "Adventures of Ozzie & Harriet"*

GOLDWYN STUDIOS

NORBERT BRODINE, ASC, "The New Loretta Young Show"*

INDEPENDENT

WILLIAM CLOTHIER, "McClintock" (Batjac Prod, UA release, P'Vision & Technicolor) with John Wayne and Maureen O Hara. Andrew V McLaglen, director

WILLIAM MELLOR, ASC, "The Greatest Story Ever Told" (Geo Stevens Prod UA release, P'Vision & Cinerama in Technicolor) with Max Von Sydow and Charlton Heston George Stevens, producer director

ELLIS CARTER, ASC, "The Corpse Makers (Admiral Pictures, UA release, Technicolor) with Vincent Price and Mari Blanchard Sidney Salkow director

JOSEPH MACDONALD, ASC, "Muriel" (Argos Films Alpha, Paris & Dear Films Rome, UA release, Eastman color, shooting in France) with Delphine Seyrig and Jean Phierre Alain Resnais, director

JOSEPH BIROC, ASC, "Toys in the Attic" (Mirisch Co, P'Vision) with Dean Martin and Geraldine Page George Roy Hill, director

JOSEPH LA SHELLE, ASC, "Irma La Douce" (P'Vision & Color, Mirisch Edward Alperson Presentation) with Jack Lemmon and Shirley MacLaine. Billy Wilder, director

TED MOORE, "Call Me Bwana" (Eon Prods. shooting in London) with Bob Hope and Anita Ekberg. Gordon Douglas, director

RUSSELL METTY, ASC, "The Thrill of it All" (Ross Hunter Martin Melcher Prod, Technicolor) with Doris Day and James Garner Norman Jewison director

CONRAD HALL, "Sloney Burke"* (Drystar)

JACK HILDYARD, "55 Days at Pekng" (Samuel Bronston Prod., Super Technirama 70 & Technicolor, shooting in Spain) with Charleston Heston and Ava Gardner Nicholas Ray, director

HARRY WAXMAN, "Summer Flight" (Mirisch Barbican Films-Carrollton of Panama, UA release, color, shooting in London) with Susan Hayward and Michael Craig. Daniel Petrie, director

WILKIE COOPER "Mouse on the Moon" (Lee Camp Prod., shooting at Carthay Studios) with Aubrie Martin and Roy Thinness Dave Tomack, director

GEORGE FOLSEY, ASC, "The Balcony" (City Film Corp, Continental Distr. Co release) with Shelley Winters and Peter Falk Joseph Strick, director

KEYWEST STUDIOS

FRED WEST, ASC, (Family Films) Series of Religious pictures

La BREA STUDIOS

ROBERT HAGER "Perry Mason"*.

M-G-M STUDIOS

GEOFFREY UNSWORTH, "Tamahine" (Seven Arts Prod Eastman color; shooting in Paris, Tahiti & London) with Nancy Kwan and Dennis Price Philip Leacock, director

JOSEPH RUTTENBERG, ASC, "It Happened at the World's Fair" (Ted Richmond Prod, P'Vision & Metrocolor) with Elvis Presley and Joan O'Brien. Norman Taurog, director.

ROBERT PITTACK, ASC, GEORGE CLEMENS, ASC, "Twilight Zone"*

HARKNESS SMITH, ASC, "Dr. Kildare"*

DALE DEVERMAN, ASC, "The Eleventh Hour"*

WILLIAM SPENCER, ASC, "Sam Benedict"*

ROBERT HAUSER, Combat"*

NEW YORK STUDIOS

GEORGE JACOBSON, "Emmett Kelly Show"*

PARAMOUNT STUDIOS

FRANK PHILLIPS ASC, "Have Gun Will Travel"*

Continued on Page 759

AMERICAN SOCIETY OF CINEMATOGRAPHERS

Founded January 8, 1919 The American Society of Cinematographers is comprised of the leading directors of photography in Hollywood motion picture and TV film studios. Its membership also includes cinematographers in foreign lands Membership is by invitation only

OFFICERS

William Daniels, President
Hal Mohr, 1st Vice President
Arthur Edeson, 2nd Vice President
Joseph Ruttenberg, 3rd Vice President
Arthur Miller, Treasurer
Sol Halprin, Secretary
George Folsey, Sergeant-At-Arms

BOARD OF GOVERNORS

Joseph Biroc, Robert de Grasse, Daniel Fapp, Lee Germes, Milton Krasner, Ernest Laszlo, Victor Milner, Walter Strenge

ALTERNATE BOARD MEMBERS

Harold Lipstein, Winton Hoch, Gordon Avil, Lucien Andriot, Philip Tannura, Lionel Lindon, John Arnold, George Clemens, Linwood Dunn, Arthur Arling.

SYLVANIA ANNOUNCES A SUN GUN MOVIE LIGHT YOU CAN USE ANYWHERE!

NEW BATTERY-POWERED SUN GUN 30-V

Most versatile movie light ever made!
It goes anywhere Lights anywhere Makes it easier for you to shoot effectively under *any* conditions

New 30-volt, Battery-Powered SUN GUN Movie Light is completely portable Gives plenty of light for any job Allows complete flexibility for every kind of news and location situation

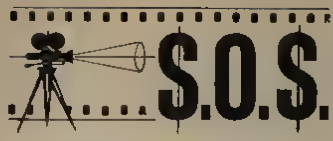
It's a battery-powered version of the remarkable SUN GUN that Hollywood studios have proved in use for over a year Complete unit weighs only 16½ pounds including battery Yet pound for pound it outperforms any other battery-powered movie light made!

The battery pack itself is specially designed for SUN GUN Movie Light by Frezzolini world's leading power pack designer It measures only 10" wide by 3" deep Recharges automatically in a short time Has built in recharger with automatic cutoff to prevent overcharging, give extra-long life Battery-powered SUN GUN is easy to handle, completely adjustable, fits any camera For more details, see your supplier or write SUN GUN Dept., Sylvania Lighting Products, Division of Sylvania Electric Products Inc., 730 Third Ave., New York 17, N.Y.

SYLVANIA

SUBSIDIARY OF

GENERAL TELEPHONE & ELECTRONICS



GIGANTIC SALE

See also pages 716 & 718

EDITING, CUTTING ROOM SUPPLIES & ACCESSORIES

MOVIOLA 16MM Model U1PVCS Block Preview sound one side, composite sound and picture on other magnet c/optical
Excellent condition $1995 00

FILM HANDLING EQUIPMENT

R & H Hot Pedestal Splicer, 35MM.
Good condition $595 00

R & H Hot Pedestal Splicer 70MM
Good condition $895 00

FOSTER AUTOMATIC Rewind on table with inspection lite 110V AC 60 cycle, heavy duty motor, foot pedal control, speeds zero to 875 RPM
New $435 00

FRESTO Hot Splicers, 16MM Originally $747 00
Reconditioned $495 00

With interchangeable 16MM and 35MM heads, reconditioned $595 00

MOTION PICTURE PRINTERS

ACE 35MM Soundtrack Printer on pedestal operates with any picture Good $295 00

REIL & HOWELL Printer Model D continuous contact 5 way aperture with original style lamp house Good condition $1995 00

R & H Model D Printer Reconditioned $2465 00

R & H Model D Printer, with standard 300 watt hi intensity lamphouse, blower cooled DC rectifier Rebuilt like new $4495 00

R & H 35MM Main Sprockets for D Printers $500 value New $195 00

CINECOLOR Double Head 35MM Step Printer with automatic lite change and timing device Originally $12,000 (Bank Foreclosure) Good condition $2695 00

CUSTOM BUILT 35MM Step Printer on pedestal pilot pin registration Fair condition $395 00

DEPUE Optical Reduction Printer 35/16 picture with automatic light changer
Reconditioned $3995 00

DUPLEX AUTOMATIC 150 Scene Light Change Boards $15,000 value (plus $20 crating) $195 00

DUPLEX 35MM Step Printer (2 machines in one) Excellent Plus $35 crating $295 00

FILM PROCESSING EQUIPMENT

FILMLINE R15TC reversal/negative/positive machine with refrigeration bottom drains air compressor cushion bio squeegee variable speeds up to 1200 ft per hour Good condition $2450 00

FILMLINE Model R40TC reversal/negative/positive machine with refrigeration recirculation pump, drain pump, air compressor Originally $4865
Good condition $2995 00

GFL 401 HI Speed 16MM Spray Processor, neg / pos Originally $8000 Reconditioned $2995 00

HOUSTON FEARLESS 16MM daylight loading mag for all MF Processors $300 val $99 50

HOUSTON FEARLESS Model 1 16MM neg /pos variable speed Reconditioned $895 00

MAMMOTH HOUSTON Color Processor 16/35MM Ansco/Ektachrome, neg /pos up to 1200 ft per hour 16 stainless steel tanks Full temperature control Recirculation air supply 7 squeegees Cost Cuban Govt $35,000
Rebuilt like new $11 995 00

➤ Many Other Extra Specials
Write for brochure

S.O.S. PHOTO-CINE-OPTICS, Inc.

602 West 52nd St New York 19—Plaza 7 0440
Western Branch 6331 Hollywood Blvd., Hollywood, Calif

Q & A

Technical Questions and Answers

Q.—*To shoot scenes in a factory office for a color production I'm presently making, I wish to take advantage of the available light. Thus far, my production has been shot on Kodachrome II and I am thinking of using Ansco Color 100 and an f/0.95 lens. I am planning to buy to get the speed necessary to shoot under the prevailing light at this location.*

I have been advised that Kodachrome II with an exposure index of 25 for daylight or 40 for tungsten light will give me good results with my present Cooke f/1.4 lens. My preference is for the f/0.95 lens. What do you advise? C. N. T., Cincinnati, Ohio

A.—The f/1.4 lens should give you better resolution than the f/0.95 lens. The results you would get otherwise with the f/1.4 lens would depend, of course, on the amount of light that will be available to you. If your meter shows that light volume is insufficient for shooting at f/1.4—or even at f/0.95—then the only alternative is to use the faster color films such as Anscochrome or Ektachrome ER.

Q.—*I have been attempting to print and develop 16mm film, using a Uhler continuous contact printer. I have used both Eastman fine grain release positive No. 7302 and Gevaert's No. 561—both developed in Gevaert's No. 203 developer. My problem is that I invariably end up with prints having uneven densities throughout their length. Thinking that this might be caused by fluctuation in the printer light due, possibly, to fluctuating current, I converted the printer to DC operation, but the trouble continues. Any place where there is a solid tone frame to frame, there seems to be a change in density.*

The camera film developed in the same processor but using D76 developer does not show any of this effect.—R. A. C., Moncton, N. B., Canada

A.—It would appear that the non-uniformity described comes from one of two sources: lack of agitation in the developer or variation in the printer speed. It is quite possible, too, that the condition described could be quite objectionable when viewed by projection as a high-contrast positive and almost unnoticeable when viewed as a low-contrast negative over a light box. If you are using rack-and-tank or rewind type processing equipment, it is very probably that you are obtaining non-uniform development.

With respect to the printer you are using, it appears that every precaution has been taken by the manufacturer to provide a constant intensity lamp and vibration free film transport. One additional item which you did not mention that should be checked is the uniformity of the film drive of the printer, since this is more likely to cause this sort of problem than vibration or lamp flicker.

Q.—*I have a series of extension tubes designed to work on a Bolex 16mm camera. What f/ stop correction would be required when using these extension tubes with a 25mm lens? The tubes range from 5mm to 75mm, in increments of 5mm.*—M. Z., Los Angeles, Calif.

A.—The increase in exposure necessary when using extension tubes is based on the ratio between the length of the tube and the focal length of the lens. This can easily be determined by dividing the length of the extension tube by the focal length of the lens. The necessary increase in f/ stops can then be found in the chart below.

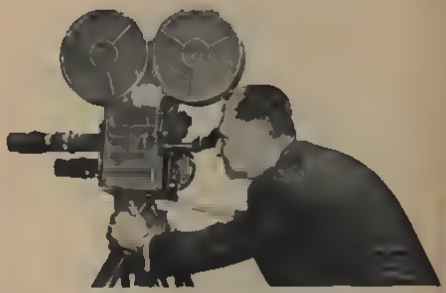
Length of tube divided by focal length of lens	Increase in exposure in f/ stops
0.1	⅓
0.2	⅔
0.35	1
0.5	1⅓
0.75	1⅔
1	2
1.25	2⅓
1.50	2⅔
2	3½
3	4

As an example, let us assume that a 5mm extension tube is being used with a 25mm lens, we work it out mathematically as follows:

$$\frac{5}{25} = 0.2$$

A glance at the chart above will show that 0.2 calls for an exposure increase of ⅔ of an f/ stop. This formula and chart applies for any lens and any type camera. ■

"On my U. N. beat I push SUPERIOR® 2 to 250 and even 400— and my picture quality holds!"



"We're shooting fast-moving international figures at the United Nations on short notice, in all sorts of light," says Irving Heitzner, Hearst Metrotone News. "I can boost the rating, tell the lab and get first-class footage. Perfect clarity. No noticeable grain. And we shoot single system, get sound on SUPERIOR 2 negative that sounds like positive."

Mr. Heitzner's work won a Special Award this year in the "Sound-on-Film" category during the annual Journalism Week sponsored at the University of Missouri by the National Press Photographers' Association and the World Book Encyclopedia. For your own work Du Pont films—and technical data on them—are available from the Du Pont Photo Products sales offices shown here.

ATLANTA 18, GA., 1737 Ellsworth Ind. Dr., N. W. 355-1230 • CHICAGO 46, ILL., 4560 Touhy Ave., Edgebrook Station ORchard 5-5500 • CLEVELAND 16, OHIO 20575 Center Ridge Road 333-3674 • CLIFTON, N. J., 380 Allwood Rd., Allwood Station (New York) GRegory 3-4004 DALLAS 7, TEX., 1628 Oak Lawn Ave. Riverside 1-1404 HOLLYWOOD 38, CALIF., 7051 Santa Monica Blvd. HOllywood 9-5147 • WALTHAM 54, MASS., 45 4th Ave. (Boston) TWinbrook 9-8300 WYNNEWOOD, PA., 308 E. Lancaster Ave. (Phila.) TRinity 8-2700 • EXPORT, Nemours Bldg., Wilmington 98, Del. • IN CANADA, Du Pont of Canada Ltd., Toronto

DU PONT

BETTER THINGS FOR BETTER LIVING . . . *THROUGH CHEMISTRY*

THE LAB FOR REVERSAL FILM

16MM

BLACK & WHITE
REVERSAL
PRINTING
&
PROCESSING
&
COLOR PRINTING

OTHER SERVICES

- Work Prints
- Color-to-Color Prints
- Color-to B & W Prints
- Raw Stock
- Ultrasonic Film Cleaner
- A & B Roll Prints
- Fades-Dissolves
- Timed Prints
- Edge Numbering

FOR COMPLETE INFORMATION WRITE

LAB-TV

723 Seventh Ave., New York 19, N.Y. • JU 6-2293

8MM FOR TV NEWS REPORTING

Because of its size and simplicity of operation, the 8mm sound camera takes its place with the portable tape recorder and typewriter as a vital tool for TV newsmen.

8MM FILM, and particularly its potential in professional film production, is a much-debated subject these days in some areas of the film industry. Until recently, motion picture cameramen have been more or less just observers during the debates, believing that any professional or commercial use of 8mm films will probably begin with the picture material and sound recorded on 35mm or 16mm negative and then be reduction-printed.

In the meantime, several explorations have been made to determine if 8mm could be successfully used for TV newsfilm. Dick Hance,* columnist-reporter for *National Press Photographer* presented a comprehensive report on progress made in this direction in the November, 1962, issue of that publication.

Because we feel his report is of special interest to the many freelance and TV news cameramen among our readers, we are reprinting his report herewith, omitting the customary quotes for sake of simplicity in our presentation. According to Vance:

The small format film, or 8mm, has become the center of conversation in the many motion picture technical sessions held here in Chicago. Each month the speculation increases with the result that 8mm is rapidly taking its rightful place in the commercial picture. This holds true not only for industrial or educational use, but, after careful investigation and experimentation, I am convinced it has an important potential in television news work.

In the area of costs, the 8mm technique indicates, including personnel, a saving of something over 50% as against the use of 16mm film. Keeping in mind that we have had to use equipment primarily designed for the amateur and priced accordingly, the quality obtained through the film chain system was as good as the present standards used with 16mm film. Better equipment must be designed to withstand the daily rugged use given cameras and projectors in our profession. I feel that before many more months go by we will see new 8mm systems available to us.

Advantage In Compact Size

Beside costs, the primary advantages of the small format is the drastically reduced weight and size of the equipment without sacrificing quality. Using the Fairchild Cinephonic Eight as a basis, the soft camera becomes an important tool for the TV newsman. Because of its size and simplicity of operation, the sound camera takes its place with the small tape recorders which radio newsmen use, the small portable typewriter used by newspaper reporters and the small unobtrusive camera of the "still" man. Instead of the usual large, clumsy and heavy equipment, the sound camera allows the TV reporter to be completely mobile and highly portable with ease of recording both picture and sound. I carry the present Fairchild sound camera complete with all accessories in a small 35mm gadget bag. This includes an f/1.8 zoom lens. One thing should be noted. Under the present method and cost of the magnetic prestripping for 8mm, the cost per foot is comparable to 16mm, but improved stripping equipment and increased consumption will reduce film costs substantially.

In my mind, the ease of operation, compactness and extreme mobility overshadow film costs at the present time. Using this equipment, whether it is sound camera or silent, opens up a new area for concept of TV news reporting. It allows the local TV station to write the news with picture and sound instead of telling the audience with words only. It calls for new techniques and procedures to be developed.

Uses Dupont Film

Presently we are using Dupont 930 and 931 reversal film perforated for 8mm prestripped. The processing is done in a commercial motion picture laboratory and is processed along with the regular 16mm film in the same machine, at the same time, in the same solutions.

We are presently using a modified Fairchild Cinephonic sound projector in connection with the film chain system. The modification includes a redesigned 5-blade shutter to permit projection into the film chain system without causing "shutter bar." A synchronous motor replaces the standard motor to insure exact projector speed. Timing belts were substituted for the smooth belt drive to the shutter.

One of the interesting aspects of using 8mm on an experimental basis is that the average person in the TV audience doesn't realize he is watching 8mm instead of 16mm, unless told. The difference is so slight that even a professional finds it difficult to differentiate between the two.

The small format usage of 8mm in the future will become generally accepted because of the substantial saving in costs. The small format offers a field of new concepts in gathering and "showing" the audience the news. The simplified technical requirements needed to use this equipment means better and faster coverage of the local scene. This equipment, I believe, will allow the TV news film cameraman to become truly a motion picture journalist instead of a photographer. I restate that the present equipment available is not strong enough to withstand the day-to-day rugged operation of a TV news operation. ■

*Dick Hance is also Executive Producer, WGN TV News, Chicago, Ill.

S.O.S. EDIOLA® ACTION VIEWER

PROFESSIONAL 16mm MODEL

Easy to Look at

S O S Ediola M-16 Jr Action Viewer	$ 99 50
S O S Ediola M-16 Sr. Action Viewer with pressure plate and double pad rollers (left to right)	$135.00
S O S. Ediola MRL 16 Sr. Action Viewer with pressure plate and double pad rollers (right to left)	$195 00
S O S Ediola Pio-35 for 35mm	$395.00
Madel MA Pro-8 Viewer far 8mm	$ 89.50

Write for illustrated brochure

S.O.S. PHOTO-CINE-OPTICS, INC.

formerly S.O.S. CINEMA SUPPLY CORP.

602 W 52nd St, N Y. 19, N Y.—Plaza 7-0440—Telegram "FAX, N Y."
Western Branch: 6331 Hollywood Blvd, Hollywood 28, Calif. — Phone 467 2124

SEE OFFERING OF EXTRA-SPECIAL VALUES ON PAGES 716, 718, 720 AND 757

STUDYING STORYBOARDS depicting sequences for Columbia Pictures 'Bye Bye Birdie,' are (from left) cinematographer Joseph Biroc, ASC choreographer Onna White and director George Sidney who shot the stills for the boards

Plotting Camera Angles With Storyboards

Director George Sidney used storyboards to visualize key scenes for the most desirable camera angles and compositions in planning the photography for Columbia Pictures' "Bye Bye Birdie."

By DARRIN SCOT

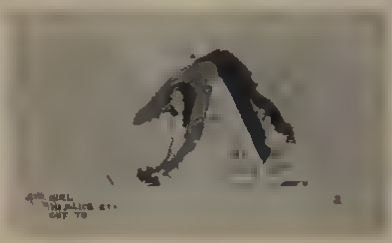
WHEN PLANNING THE photography of the complicated musical numbers for Columbia Pictures' "Bye Bye Birdie," Director George Sidney made extensive use of storyboards to save time, more precisely coordinate the complex mechanics of staging dance and musical routines, and to infuse these routines with the utmost in visual impact.

Two types of storyboards were used. The first involved drawings—continuity sketches made by an artist that detailed precisely each camera angle and visual effect to be achieved. This technique, though little used in feature productions, is not new. It was previously employed by William Cameron Menzies in plotting camera angles and composition for "Gone With The Wind." It is also a standard preliminary step in the development of animated cartoons.

The second storyboard type which Sidney utilized is his own development and one which he believes unique in its application to film production. It involves shooting in sequence individual still photographs establishing every angle and movement to be duplicated by the motion picture camera during actual shooting of the picture. It is, in several ways, much more precise and detailed than the sketched storyboard although, as Sidney points out, each method has its own special advantages.

He used the artwork storyboard

BELOW IS STORYBOARD sketch and at right, the actual visualization of the scene as performed by Melinda Closky for the "Telephone Hour" number for Bye Bye Birdie."



when working from scratch to plan a sequence that involved a great many mechanical effects calculated to achieve a kind of visual impressionism. The opening sequence of the film, for example — a number called "Going Steady"—he envisioned as a kind of musical collage in which a jig-saw series of staccato cuts and special effects would fit together to depict the modern teenager's almost umbilical dependence upon the telephone as a cohesive instrument of peer group "togetherness."

The initial steps entailed breaking the dance number routine down and charting it according to how many bars of music were to be covered by each shot or camera move. Conferences were then held with the art director, cameraman, choreographer and musical director on the final visualization of each separate composition with an eye to achieving maximum impact. An artist then prepared sketches accordingly and arranged them in continuity to form a precise technical blueprint of the proposed sequence. The final rendering was done in color so that the palette of hues relating to wardrobe and sets could also be visualized. Upon approval by the director, reproductions of the storyboard were run off and distributed to the set designers, cameraman, gaffer, wardrobe department, choreographer, musical arranger, editor and every other department and technician concerned with production of the sequence. The original storyboard was set up on the stage for quick reference during shooting.

The choreography and orchestration of the "Going Steady" number grew out of its visualization by means of the storyboard, so that the entire routine—complete with intricate split-screen effects, superimposed cartoon animation and special lighting—was worked out in detail before a dancer, singer or actor walked onto the rehearsal stage. The more than forty separate camera viewpoints were so precisely synchronized to specific bars of music that the sequence was, in effect, edited before it was photographed. Most important of all, everyone involved, from the actors to the technicians, knew exactly what he should be doing and why at any given moment.

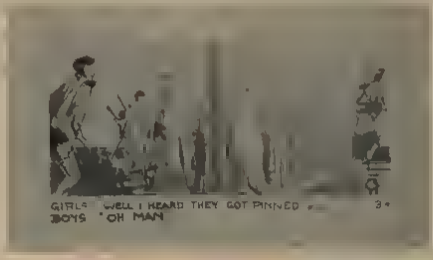
Sidney utilized his photographic storyboard in planning most of the other musical numbers of the picture. A "camera-hug" of international renown who has 50,000 of his own negatives on file and whose still photographs have been reproduced in Life, Time, and similar top-drawer magazines, he shot the stills himself using a Nikon 35mm camera equipped with a 25mm lens masked off to exactly the field of the 40mm Panavision lens used in the actual filming. Occasionally, when pressed for time, he used a Polaroid Land Camera to produce finished stills right on the spot instead of having to wait for conventional developing and printing.

Using his still camera as he ordinarily would use a Mitchell viewfinder to plot camera angles, Sidney followed the roughed-in choreography of a number, moving in and out and shooting at various camera angles as the rehearsal

Continued on Next Page

SKETCH BELOW is storyboard visualization of another singing and action number, and below—the actual scene as photographed for 'Bye Bye Birdie'

ULTIMATE INTERPRETATION of a storyboard sketch is clearly illustrated here, and shows change of positions of couple telephoning plus an elevated camera angle



JOSEPH BIROC S camera crew with operator Andy McIntyre behind the crane mounted Mitchell has a job on its hands keeping the fast-moving Janet Leigh and dancers centered in the finder Photography of "Bye Bye Birdie" is in Panavision and color

progressed. Each time he snapped a picture, the spot on the floor where he was standing was marked and coded so that later the motion picture camera could duplicate the camera angle and the position. The resultant still pictures were arranged in sequence on a storyboard for study.

When the storyboard was approved, Director of Photography Joe Biroc, ASC, who had been an observer during preliminary rehearsals, could take this photographic blueprint and move in a day in advance of the shooting, light the set, and establish camera angles corresponding with those in Sidney's still shots. This advance preparation of photographic facilities resulted in saving a great deal of time on the sound stage when actual filming was under way.

Whenever possible, storyboard stills were shot in the actual set where a number was to be filmed. When this was not practical, a bare stage and sketchy props were used. The performers that were to appear in the sequence would run through the routine, but if one or two could not be present their places were taken by stand-ins. Where hundreds of extras were called for, perhaps only 25 to 50 would be used in rehearsals. The storyboard photographs indicated where the rest were to be positioned during actual shooting.

One important number, "How Lovely to Be a Woman," lasts two minutes and forty seconds on the screen. To creat the desired fluidity, it was shot in one continuous take involving more than thirty separate camera moves—all carefully plotted on the storyboard. Only one player, a girl, appears in the sequence and the action is rather complicated. It begins with the girl lying on a bed, talking on the phone. She gets up, goes to a dresser and starts her song, then moves back and forth through the room and over the bed while she changes her clothes. Rehearsals were photographed on a bare stage, using only a bed for a prop. Earlier, the orchestrator worked from the storyboard stills to plot his musical effects before the song was recorded. Similarly, cameraman Biroc was able to determine in advance the kind of lighting problems he would encounter in shooting the scene.

In contrast to this dreamy number is a wild, crazy number called "Honestly Sincere," which was shot in a vast set—a town square built on the backlot of Universal International studios. For seven minutes 500 gyrating

Continued on Page 754

Production Worries

in Europe
solved by

MOLE RICHARDSON

LIGHTING
ENTIRE M. R. RANGE
COLORTRAN and LOWEL-LIGHTS
GENERATORS
CAMERAS · DOLLIES
CRANES
GRIP- and SOUND-Equipment
TRANSPORT-LABOUR
TECHNICAL-CONSULTANTS
and SPECIALISED-SERVICES

WRITE DIRECT

FRANCE — 28-28 bis Rue Marcelin-Berthelot, Montrouge-Seine
Cables: Molereng-Paris
General Manager: René Schell

ITALY — Via del Veladrama 68-74, Roma
Cables: Molereng-Roma
General Manager. George Gordner

GERMANY (Austria)
Hofangerstraße 78, München, 8
Cables: Molereng-München
General Manageress: Gisell Schneeberger

SPAIN — Alcalá 32, Madrid, 14
Cables: Molereng-Madrid
General Manager: Gregorio Sacristan

ENGLAND — Chase Road, London, N.W.10
Cables: Molereng-London
General Manager John A. Page

FIG 1—Looking through the eyepiece of the finder on the 16mm Kodak Reflex Special camera, mounted vertically over a microscope, PFMR's cinemotographer, C George Lefeber, observes cellular activity as it is being photographed

Some advantages of the reflex camera in

CINEMICROANALYSIS

Many important discoveries have been made in medical and biological fields as a direct result of time-lapse cinemicroanalysis produced by the Pasadena Foundation for Medical Research. Here a new Kodak Reflex Special camera augments a battery of Cine Specials to record subject matter under the microscope.

By JIM CARTER

MANY OF THE IMPORTANT recent discoveries that have been made in medical and biological fields are the direct result of time-lapse cinemicroanalysis. Among the important laboratories in the U.S. engaged in this work is the Pasadena Foundation for Medical Research in Pasadena, California, whose biological cinematographer is C. George Lefeber.

Lefeber's laboratory cinematography is always done through a microscope and it is important, he says, to be able to view the subject and focus the camera through the taking lens during actual photography. Until recently, he had been using several Kodak Cine Special cameras for time-lapse microscopic studies. Now a Kodak Reflex Special camera—a recent addition to the Foundation's equipment—affords full reflex viewing. It was because of the advantages inherent in this camera's reflex finder system that it was chosen to up-date and expand the Foundation's motion picture facility.

The main advantage of the Reflex Special for this specific work is that its entire optical system functions through the lens being used to photograph the subject material. When the camera's mirrored, rotating, variable shutter is closed, it reflects an image to a ground glass in the viewfinder. When the shutter is open, this image is transmitted directly to the film itself.

In the Reflex Special, the ground glass image corresponds exactly with the picture registered on the film. Since the focus of the viewfinder system is in the ground glass image, it is impossible for the operator to focus the viewfinder sharply if the camera lens is out of focus.

With the former method, using the Cine Special camera, the latter could not be focused positively while in actual use. The subject was viewed through a periscope built into the optical system between the camera and the microscope (Fig 2). The periscope, which allowed the photographer to see the subject after the camera was in place, could not be used to determine if the picture was in focus.

The optical system of the periscope was found to cause a 10 per cent loss of light between the subject and also the appearance of "hot spots" in the sequences of cultures filmed at high magnification. Since most of the cinematography at the Pasadena Foundation for Medical Research is done under high magnification, "hot spots" were a serious obstacle to the success of its cinemicroanalysis program.

With the Reflex Special, the viewfinder eyepiece can readily be adjusted to accommodate the focusing abilities of the eyes of different camera operators. It can also be adjusted to vary the magnification of the ground glass image itself. This magnification may be varied from 10× to 20×, providing ideal critical focusing on minute particles within cells. Cell studies at the Foundation are made through microscopes with magnification capabilities up to 100×. Added capabilities of up to 20× are

provided by a range of interchangeable camera lenses. When photographed at this magnification on a 16mm frame, a specimen will be magnified about 100,000 times when projected on a screen.

A typical experiment-recording setup is shown in Fig. 3 and shows the Reflex Special camera mounted in a downward viewing position above a microscope enclosed in a radiantly heated incubator. A Bausch & Lomb ribbon filament lamp supplies the necessary photographic illumination and exposures are determined by means of a Photovolt light meter.

All the cell sequences filmed at the Foundation are "time-lapse" studies. They are photographed most commonly at one, four or eight frames per minute. When projected at normal viewing speeds the "time lapse" between frames is compressed. At such rates of exposure the capability of the Reflex Special to use either 100-foot, 100 foot or 1200-foot rolls of film becomes an advantage in that it increases the time period during which a culture can be studied. At the rate of one frame per minute, a 400-foot roll of film can monitor a tissue culture for 11 days. At the normal rate of projection of 24 frames per second, 11 days of monitoring would be compressed into 12 minutes of viewing. On the screen the cell activity is speeded up more than 1,000 times.

Due to the difficulty of maintaining a culture without injury under the conditions of filming, individual experiments normally do not run more than five days at the present time. Therefore, the bulk of such filming is done on 100-foot rolls of film. The camera's 400-foot magazine is valuable, however, where a series of cell cultures is to be filmed as part of a continuing study and it is also frequently employed for studies made at the higher speeds of four or eight frames per minute.

Another built-in advantage of the Reflex Special for this type of work, it is pointed out, is its crosshair viewfinder. Some of the most startling discoveries made with time-lapse studies have been movement patterns—never suspected before—within the cell. With the reflex camera these elements can be positively positioned relative to the crosshair in the finder.

Lefeber has found that standardization of all aspects of the cinemicroanalysis process, such as lighting and exposure, are advantageous. Most time lapse sequences are photographed with exposures ranging from one-quarter-second, half-second to one-second per frame.

Eastman Plus-X or Tri-X Reversal film is used for most of the Foundation's microanalysis projects largely to protect the initial recording. A scientist will take the calculated risk of damage to the original film, if he can study this rather than a print. The use of reversal film also helps keep processing variables and costs at a minimum.

Processing of films is done by a Hollywood laboratory with a reputation for strict quality control of 16mm B&W reversal. Accompanying each roll of film sent to the laboratory is a two or three foot test length of film that includes samples of exposures contained in the roll. Processing and evaluating of this test strip enables the lab to gauge the processing procedure for the roll. An average of 50 rolls of film, totaling 5,000 feet, are processed for the Foundation monthly.

An important factor in the use of reversal film, says Lefeber, is the fact it reduces the bulk of film to be stored. More than 500,000 feet of 16mm reversal film are now contained in the Foundation's library. If negatives and master positives had to be made of each filmed sequence produced to date, the library would be more than twice its present size.

Another reason reversal film is used is that abstracts are made from many of the films. At present, there are between 10,000 and 50,000 abstracts on file at the Foundation. By using reversal film, technicians can go directly from the 16mm film to 4"x5" negatives in making abstract prints.

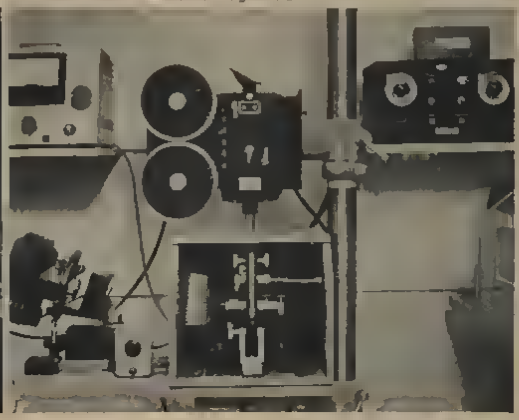
Scientists using abstracts to illustrate their work determine which frames they want by viewing the films in a conventional editor-viewer. The selected frames are then marked with pieces of thread to indicate which frames are to be printed. The time relationship between abstracted illustrations is determined by counting the frames between pieces of thread.

Many important discoveries have been made in medical and biological fields as a direct result of the time-lapse cinemicroanalysis techniques used

Continued on Page 749

FIG 2—Corner in photographic laboratory of the Pasadena Foundation for Medical Research shows battery of Cine Special cameras (right) mounted above periscopes leading directly to microscopes in protective cabinets below. The new Reflex Special is at left.

FIG 3—Typical experiment-recording setup in which the ReRex Special is mounted in vertical position to shoot downward through tube to microscope in radiantly heated incubator. Ribbon filament lamp that furnishes illumination for filming is at extreme left.



AS THE FILM AND sound tape are moved across the Teleduo console, the editor observes the images of each film on the smaller TV monitor screens. The selected cuts appear on the third monitor above. The negative can be cut, as shown here, for immediate telecasting and the image electronically converted to positive.

THE TELEDUO electronic film editing console. The three pedals on floor enable operator to control movement of films and tape either forward or in reverse and at varying speeds.

ELECTRONIC FILM EDITING

The Teleduo makes it possible to edit TV films and sound without actually cutting the film or tape.

By HANS KOEBNER

A UNIQUE SYSTEM of electronically "cutting" 16mm film was demonstrated for the first time at the Photo-Biennale in Paris last year. Without scissoring a single frame, the film being edited was so "cut" that it could be put on the air for television directly from the editing table. For other type films, it permits editing an entire sound production without need for actual preliminary cutting and splicing.

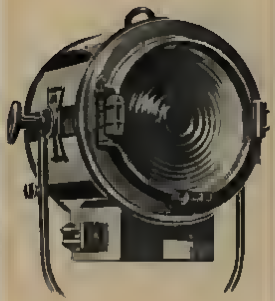
This unique film editing procedure is worked out on a new item of equipment called the Teleduo, product of W. Steenbeck of Hamburg, Germany. Designed for speedy editing of films with the sound on a companion reel of perforated magnetic tape, it enables an editor to cut a preview version of a film that must be ready for telecasting or other showing in the shortest possible time.

Continued on Page 752

LOOKING DOWN ON console of the Teleduo, showing arrangement of films and tape and the various transport and control components. A & B, image scanner and prism that diverts image to Vidicon camera; C, sound scanner, playback and erase head; D, sound-tape drift compensator; E, pushbuttons for control of sound and picture drift; F, switch that directs picture to top monitor and also cues tape; G, quick run switch, H, manual step, forward, and reverse pushbuttons; I, illuminated ground viewing glass; J, scraper plate; K, signal lamp.

Charles Ross INC

For the most complete line of Specialized Lighting Equipment



Charles Ross INC

Largest Suppliers of Motion Picture, TV and Industrial Photographic Equipment in the East

Charles Ross INC

appointed

Sole Distributor

of

Mole-Richardson Co.

Products in

New York City

Charles Ross INC

for

Generator Trucks and Trailers, Grip Equipment, Props

You're always on schedule with . . .

Charles Ross INC.

333 West 52nd Street
New York 19, N.Y.
Circle 6-5470

Since 1921...

Charles Ross INC.

for

RENTALS

SALES SERVICE

Send for a schedule of rental rates.

SHOESTRING MOVIE MAKERS

There's a new breed af film maker abroad in the land turning aut law-budget motion pictures that find ready acceptance os campanion features ta Hallywaad's high-budget block-busters. An example is the husband-wife team, Rolph and Bri Brooke, whase three-reel calar film, "The Magic Tide," is presently enjaying baxaffice success.

By DON MURRAY

WRITER DIRECTOR Ralph Brooke looks on as wife Bri shoots scene of craft setting sail on bay

Bri Murphy Brooke is rated Hollywood's only professional woman cinematographer. Recently, she and husband Ralph produced "The Magic Tide," a 32-minute color film which has found ready acceptance among exhibitors as a companion for feature attractions. Bri (pronounced Bree) photographed and edited the picture and Ralph wrote the script and directed it.

"The Magic Tide" is a simple story which takes place in San Felipe, a small Mexican fishing village in Baja California. It tells of a young Mexican lad who dreams of following his elders to sea and an equally young lass an American visitor, who becomes part of that dream. Together, using scraps of wood and borrowed tools, they work to restore to seaworthiness an old hull long beached by a vagrant tide. It's a typical childish occupation, but in the surprising climax their boat actually sails off into the bay.

The Brookes, following a spell of conventional Hollywood independent feature production—science-fiction, horror films, things like that—decided to combine Art and business and produce what they call "quality films." In the beginning they lacked finances, a script, a staff, a studio. But they had the desire and they were resourceful. After some effort they raised $600, rented equipment on a "pay later" basis, and set out for their Mexican location in two Jeeps laden with cameras, film, etc.

The small village of San Felipe, lazing in the sun of the gulf coast of Baja California, was chosen as the story location mainly because the Brookes had vacationed there and had become familiar with the town and its sun drenched sleepy charm. More important was the fact it is located on a sea inlet which becomes flooded at high tide. This provides the town with a unique natural dry dock—just made to order for launching the nondescript craft which plays such an important part in the Brooke's film.

Bri Brooke is probably the only professional woman cinematographer who attained this status with her first photographic assignment. Originally, an old friend and associate on previous productions was slated to shoot the picture. Due to previous commitments, he was unavailable by the time production was ready to start, but he provided a solution to the problem with the casual advice: "Why not shoot it yourself?" Bri liked the idea, for—thanks to her previous film making experiences with her husband—she was not entirely unfamiliar with cameras and

SIGHTING through finder of the Arriflex 16 camera, Bri Murphy Brooke lines up scene for her 32-minute color film, The Magic Tide.

THE BROOKES built this sailboat as major prop for the story and towed it to the filming location in Baja California

DEBI AND OCTAVIO stars of "The Magic Tide," sail away in the boat they built (according to the script) in closing scene of picture

their role in motion picture production She rented an Arriflex 16 and other necessary equipment from Lloyd's Camera Exchange in Hollywod, and the friend originally slated to shoot the picture gave her a crash course in operating it as well as in the general rudiments of color photography. He particularly stressed the importance of following the rules to the letter and allowing for experimentation only in composition.

There was a subsequent consultation with a technical advisor from a film company who, among other things, schooled her in the use of a blue filter to create the desired nocturnal aspect to a scene when shooting day-for-night

On location, a number of pre-production tests were shot and one of the results was to indicate the advisability of using a Polascreen when shooting in the semi tropical locale with its brilliant sunlight and to permit shooting at an f/ stop less than 16. The ASA rating of the color film used was re-evaluated from 16 to 25, and it was further decided that, although it would involve some waste of film in edge-flare and run off. 100 foot film loads would be used which would permit more frequent inspection and cleaning of the camera film gate, considering the dusty area in which the picture was to be shot

Debi, the eight year old star of "The Magic Tide" was a personal friend of the producer-team who had all the qualities and characteristics to fit her part. Octavio. the eight year old co star was a local boy who reacted to Debi in a way more natural and believable than any amount of direction might have simulated

One of the more delightful aspects of the production set-up was the delegation of authority. Ralph, as writer-director, was the unquestioned judge of his area, and Bri, as "cameraman" and editor was in sole charge of hers. The fact that, with the exception of Debi, all others involved were natives of the town, primarily children, and that Ralph could not speak Spanish was not treated as a serious obstacle. Also the fact that this was Bri's first experience shooting 16mm color under such unique conditions did not disturb them either.

The geographical or physical conditions of San Felipe are not conducive to making motion pictures with limited equipment and marginal budgets. The temperature soars to 120 degrees during most of the day and the sun reflects blindingly from the sea on one side and from the desert on the other. Trees are all but non-existant and the light-colored adobe walls of the houses glare unrelievedly In addition, there is no rainfall to speak of; and with even the slightest breeze the fine dust of the streets is disturbed, creating a real hazard for cameras

The actual shooting time for the picture was six weeks, which by normal standards may seem excessive, but it must be remembered that the time-to-footage ratio grew far out of proportion not only because the 100 foot rolls of film had to be changed constantly, but because each change meant seeking an indoor location for it The excessive heat made use of a changing bag impractical. There was also the problem of what might be called "indirect direction" Because of the language barrier it was often necessary for Ralph Brooke to do things entirely apart from the story to evoke the desired reaction from the actors This included turning somersaults in the hot dusty streets at high noon with all the townspeople sitting in the shade looking on with considerable interest Bri and Ralph found it impossible to use reflectors because of the extreme heat. This made focusing on the children's eyes very difficult and their natural inclination to grimace when in the burning sun often made it necessary to expose a full 100 feet of film in order to get one satisfactory close-up.

Fans were used to keep the film cool, but the electrical power was spasmodic at best and ice was usually not available. It was necessary, therefore, t

Continued on Page 74

Annual EQUIPMENT RENTAL DIRECTORY

		EAST								MID-WEST									
		Camera Equipment Co., N. Y.	The Camera Mart, N. Y.	Camera Service Center, N. Y.	Florman & Babb, Inc., N. Y.	Natl. Cine Equip., N. Y.	Charles A. Ross, N. Y.	SOS Photo-Cine Op., N. Y.	Camera Equip. Co., Florida	Behrend's Rental, Chicago	Burke & James, Inc., Chicago	Studio Lighting Co., Chicago	Jack A. Frost, Detroit	Victor Duncan & Co., Detroit	Western Cine Service, Denver	Mesteritz Rentals, Phoenix	Capital M. P. Studios, Phoenix	Producer Services, Dallas	Mark Armistead, Hollywood	Birns & Sawyer, Hollyd.
Camera Equipment	16mm Cameros	●	●	●	●	●		●	●	●		●		●	●	●		●	●	●
	35mm Cameros	●	●	●	●	●		●	●	●		●		●		●		●	●	●
	65mm Cameros			●				●				●							●	
	Hi-speed Cameros	●		●	●	●		●	●	●		●		●	●				●	●
	Camera Motors	●	●	●	●	●		●	●	●		●		●	●				●	●
	Lenses	●	●	●	●	●		●	●	●	●	●		●	●	●		●	●	●
	Tripods & Heads	●	●	●	●	●		●	●	●		●		●	●	●		●	●	●
	Camera Blimps	●	●	●	●	●		●	●	●		●		●					●	●
	Intervalometers	●		●		●		●	●	●									●	●
Production Equipment	Camera Dollies	●	●	●	●	●	●	●	●	●		●	●		●				●	●
	Dolly Tracks	●	●	●	●	●	●	●	●	●		●	●						●	●
	Comera Cranes	●		●	●	●	●	●	●				●							●
	Comera Cars	●		●	●		●	●	●	●			●							
	Equipment Vons	●		●	●		●	●	●				●							
Lighting Equipment	Lomps	●	●	●	●		●	●	●	●		●	●		●	●				●
	Generators	●			●	●	●	●	●			●	●			●		●		
	Dimmer Banks	●		●	●			●	●			●								●
	Power Converters	●	●	●	●	●		●	●	●			●		●	●		●		●
	Grip Equipment	●	●	●	●		●	●	●	●		●	●			●	●	●		●
Editing Equipment	Moviolas	●	●	●	●			●	●	●							●			●
	16mm Film Viewers	●	●	●	●	●		●	●	●					●		●			●
	Sound Readers	●	●	●	●	●		●	●	●					●		●			●
	Synchronizers	●	●	●	●	●		●	●	●					●		●			●
	Splicers	●	●	●	●	●		●	●	●					●		●			●
	Film Cutting Rooms	●	●					●	●						●					●
Sound Equipment	Optical Recorders	●	●	●	●			●	●							●	●	●		●
	Magnetic Recorders	●	●	●	●	●		●	●	●					●	●	●	●		●
	¼-in. Tape Recorders	●	●	●	●				●	●										●
	Microphones	●	●	●	●			●	●	●					●	●		●		●
	Mike Booms	●	●	●	●	●		●	●	●			●		●	●		●		●
	Boom Perambulators	●		●	●	●		●	●	●			●							●
F-X	Optical Printers							●												

| | | |

SETTING UP battery of Eyemo 35mm cameras for recording a phase of Project William Tell—Air Force's tactical fighter weapons conclave held in Nevada desert recently. Cameras are wired for remote control from point some five miles distant.

LOOKING NOT UNLIKE a death-dealing artillery piece is this converted gun mount with its battery of Mitchell and Hulcher cameras recording on film a bombing result during U.S. Air Force's recent Project William Tell maneuvers. Both Mitchell cameras (painted white) are coupled with super telephoto lenses for high detail closeup shots.

AIR FORCE FILMING PROJECT

By HERB A. LIGHTMAN

"MAKE IT TOUGH and make it realistic!" were the instructions passed on by the United States Air Force and Tactical Air Command headquarters in setting the keynote for "Project William Tell, 1962," the Air Force's Tactical Fighter Weapons Meet held late last September at the remote Indian Springs testing range 65 miles from Las Vegas, Nevada.

Taking these instructions as literally as they were meant, motion picture, still and television cameramen of the Air Photographic and Charting Service (APCS) swung into action, preparing to photograph and televise a rugged test of combat proficiency approaching, as nearly as possible, actual battlefield conditions. The 17 competing pilots and photo reconnaissance teams represented the cream of the Air Force, and had been selected from air wings stationed all over the world. They were scheduled to shoot at real targets, replicas of those which might be encountered on wartime tactical strike missions—tanks and jeeps reclaimed from salvage, command posts, gun emplacements, enemy missile launchers and silo sites. The terrain in which these targets were located added to the realism. One target range was almost identical in topography to a Korean valley, the other closely resembled areas which might be encountered in Europe or North Africa. The weapons used included simulated nuclear bombs (smoke charges), live napalm, high explosive ammunition and a wide variety of ground

to-air, air-to-air and air-to-ground rocket missiles

To provide the most comprehensive film and live television coverage of this dramatic spectacle, camera crews were assigned from two of APCS's most widely separated detachments: the 1365th Photo Squadron at Orlando Air Force Base, Florida, and the 1352nd Photo Squadron at Lookout Mountain Air Force Station in Hollywood.

Late in August an eight-man camera crew under the direction of Capt. Carlton F. Weber, Chief of the Documentary Division, APCS Headquarters at Orlando Air Force Base, moved into Nellis Air Force Base near Las Vegas and began filming subject matter to be telecast during the meet.

The first film project, "The Nellis Story," was to be an hour-long documentary produced in the style of a live television show so that the finished product would have the immediacy of an actual tour of the base. With this aim in mind, it had been decided to use two Auricon Super-1200 single-system cameras operating simultaneously (one for master shots, the other for closeups), each utilizing its separate amplifier but sharing a single microphone input. In theory this should have produced identical sound tracks on the films from both cameras, allowing for quick and simple inter-cutting of the two. In actual practice, however, it was discovered that due to a mismatch in impedence one track had a great deal more sibilance than the other. The problem was solved by sending the footage from both cameras to the Air Force's Lookout Mountain laboratory in Hollywood where new composite prints were made, using only the best track printed alongside both picture strips to insure consistent sound quality.

In filming "The Nellis Story," It was decided that the most effective establishing shot of the base could be made from a helicopter with the commentator actually riding in the plane and simultaneously describing on the sound track the various buildings and areas being photographed by the camera. The first problem involved devising a way of hand-holding the Auricon camera without picking up the violent vibration characteristic of helicopters. This was solved by mounting the camera on an Arriflex shoulder-pod so that the operator could more effectively absorb the more severe vibrations.

The second challenge involved finding a way to screen out the considerable noise generated by the helicopter rotors so that it would not obscure the on-the-spot track. A soundproof shield was hastily improvised for the microphone. It consisted of an empty plastic bottle commonly used for a popular brand of bleach. This was cut down and lined with sound absorbent material, the microphone inserted into the shield, and the assembly then strapped onto the commentator's face in the manner of an oversized oxygen mask. The improvised device worked perfectly, completely eliminating the din of the rotors and permitting the airborne recording of a clear sound track.

Several other filmed shows utilized,

Continued on Page 750

BATTERY OF FIELD television cameras also covered much of the maneuvers to bring details to Air Force personnel, judges and military observers some distance away. Camera is a Dage Model RGS 10, features sports type finder on top of housing instead of electronic one.

VIDEO PROGRAM director, sitting before battery of portable TV monitors set up at intermediate relay point, mixes inputs of several field cameras covering action in nearby bombing and strafing area during Project William Tell.

THE NAGRA III offers three tape speeds, accommodates tape reels up to 7" in diameter

THE STELLAVOX no bigger than a cigar box, can handle any sound recording assignment studio equipment can

WHAT'S NEW IN TAPE RECORDERS

Introducing two new compact, portable, transistorized, battery-driven recorders that promise to simplify if not revolutionize sound recording for 16mm and 35mm film production.

By JOSEPH HENRY

"WERE I RECORDING the sound for 'The Ten Commandments' today," said Loren Ryder as he showed me a compact, quarter inch magnetic tape recorder the size of a cigar box. "I would do it all with this little transistorized unit instead of the cumbersome equipment we used for that picture." *

The recorder Ryder was talking about was the recently-introduced Stellavox SM-5, product of Swiss sound engineers which his subsidiary company, Magnetic Sales Corporation, is distributing in the U.S It can be used with any 16mm or 35mm motion picture camera.

The Stellavox is one of two new Swiss-made portable, transistorized, battery-driven magnetic tape recorders recently introduced in America. The other is the Kudelski Nagra III Both have been engineered for top quality professional recording.

Each of these recorders is designed to operate and record lip sync sound with any motion picture camera driven by a synchronous motor (or by a constant speed DC motor) equipped with a sync signal generator The synchronizing signal generated by the sync generator is usually 60 cycles and is recorded on the picture sound tape by means of direct wire hookup between the sync generator and the recorder. This provides what might be termed "electronic sprocket holes" in the sound tape that ultimately synchronize the tape with the sprocket-driven picture film in the resolving operation.

Both of these recorders provide an index that shows when the sync signal is being recorded. In the case of the Stellavox, one presses a button on the recorder and reads the sync signal performance on the VU meter. With the Nagra III, an indicator is provided on the instrument especially for this purpose

A comparison of the several features of these two recorders will be of interest The "cigar box" reference noted above is a valid one; the Stellavox measures just 10" x 5½" x 2½" and

*IT IS significant that Loren Ryder, with years of major studio experience in sound engineering principally with Paramount Studios, is today perhaps the leading proponent of miniaturized battery driven tape recorders for recording sound for motion pictures. Among the first to champion the Perfectone recorder and the Ranger sync system, he subsequently developed his own sync generator system with the Echelon head that made it possible to use quarter inch tape recorders with any motion picture camera to produce lip-sync sound tracks. More recently he has developed the Ryder Wireless Sync, which links camera and recorder by short wave radio — EDITOR.

weighs less than six pounds. The Nagra III weighs 14 pounds and is 14" x 9" x 4½" in size. Both recorders may be operated in any position and are usually carried in a leather case by shoulder-strap.

On the technical side, both recorders have extremely good frequency response, flutter and speed regulation The Stellavox, which has but a single tape speed—7½ inches per second—is flat within plus or minus 1db from 60 cycles to 10,000 cycles and flat within plus or minus 2 db from 20 to 12,000 cycles Flutter and wow is plus or minus 2% peak-to-peak Signal to noise is 55 db or better

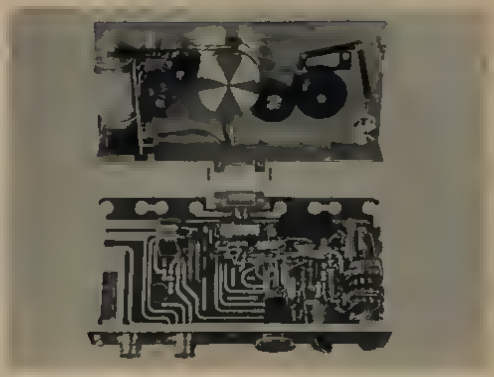
The Nagra III offers three tape speeds: 15, 7½ and 3¾ inches per second Operating at 15 ips, it has a flat frequency characteristic within plus or minus 1 5 db for 30 to 16,000 cycles, a flutter and wow below 01%, and a signal to noise ratio of 58 db

The Nagra's tape transport motor is controlled by a closed-loop transistorized Servo system, which also lends itself to full Servo resolving with the Nagra sound transfer system. The Stellavox tape is driven by a DC motor under the control of a jeweled Lee governor and two transistors. The Stellavox can also be used for resolving. In this operation, the synchronizing signal is picked up from the sync head, amplified through a pre amplifier and power amplifier that drives a sync motor on the sprocket-driven recorder.

The Stellavox is available with either the Ranger, Pilote or Echelon system of synchronization With each system the synchronizing signal is recorded with high-frequency bias that produces a well formed sine wave sync signal The Stellavox, incidentally, is the only recorder presently available with a high-frequency biased Ranger synchronizing signal.

The Nagra III is equipped with the Neo-Pilote sync system, which is compatible with both the Ranger and Pilotone methods. It also employs high-frequency bias in the sync signal recording

The Stellavox, Nagra and the Perfectone are said to be the only portable magnetic recorders to use high-frequency bias synchronization It is interesting to note that introduction of high- frequency bias was the thing that ultimately made quarter-inch tape a successful medium for audio recording



LIFTING THE DECK of the Stellavox reveals a most orderly arrangement of electronic components and wiring

Previously, synchronized quarter-inch tape as a sound medium for film production was slow to develop because of the marginal operation which ultimately was alleviated by high-frequency-bias The use of HF bias is essential to high quality, distortion-free sound recording, just as it is important to recording of the sync signal This has not been generally recognized because the synchronizing signal is not heard and is not seen.

Watchmaker Precision

The diminutive size and weight of the Stellavox are but two of its outstanding features Lifting the deck reveals one of the most orderly arrangements of electronic components and wiring that is to be seen in recorders anywhere It is typical of the watchmaker precision and efficiency that marks most Swiss products

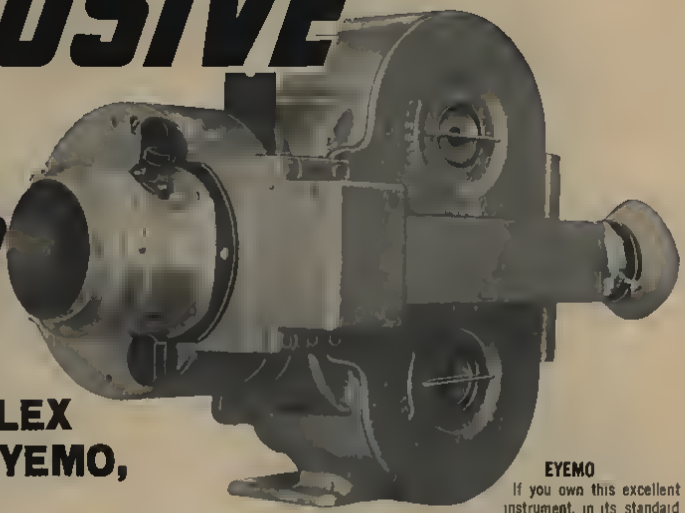
All controls are logically arranged on the front panel, with functions clearly labeled There are two input jacks—.5 volt, 30 ohms—which can be connected to headphones, line, ampli

Continued on Page 744

THE COMPACT portable tape recorders are being used more and more on Hollywood sound stages Sync generators on the cameras provide a cee signal which is recorded on the tape simultaneously with the picture sound to provide electronic sprocket holes' in the tape, enabling it to be synchronized with the sprocketed picture film

REFLEX EXCLUSIVE* BY CECO

CAMERA EQUIPMENT CO., INC



NOW ENJOY ALL THE ADVANTAGES OF REFLEX SHOOTING WITH AN EYEMO, MITCHELL OR BELL & HOWELL STANDARD CAMERA

REFLEX SHOOTING of any subject is sure and certain, as every cameraman knows. Because you see the actual image formed by the taking lens itself, there's no doubt about focus, depth of field or freedom from parallax error; and no need to rack over the camera Today, after years of intensive research, development and testing, CECO has perfected a unique Optical System* worthy of these fine cameras. Many CECO converted units have already been tried and proven in major film productions.

ALL CECO CONVERSIONS include a full (silent) film gate aperture and ground glass, and a removable academy (sound) matte in the finder system. A TV frame with center cross is etched on the ground glass. The image viewed is magnified about ten times in the Eyemo — ten and twenty times in the Mitchells and Bell & Howell Model 2709 Under most shooting conditions, no exposure compensation is necessary — yet the image you view is clear and bright even when the lens is stopped down substantially.

For full details on this great new advancement, stop in and see us, if possible — we'll be delighted to discuss it personally. Otherwise, please write us for data, literature, and prices.

EYEMO
If you own this excellent instrument, in its standard 100-ft capacity spring-wound form, we can convert it to full reflex operation at reasonable cost Or we can supply the entire camera, complete with CECO conversion We can also supply it equipped for external magazines and motor, as well as the reflex conversion

MITCHELL 35mm. Standard, Standard Hi Speed, or NC, with either single lens without turret, or with 4 lens turret, are all equally adaptable to CECO conversion — the ultimate refinement of superb professional equipment!

BELL & HOWELL 35mm.
MODEL 2709 can be equipped with the CECO reflex conversion

Reflex conversions can also be made to many other cameras.

In Rentals, Repairs, Manufacturing, Sales & Service CECO The Industry's Largest "ASSISTANT-To-The-Producer"

*PATENT PENDING

CAMERA EQUIPMENT CO., INC.

SUBSIDIARY OF CECO INDUSTRIES, INC

NEW YORK, N.Y
315 West 43rd St. • JUdson 6-1420

HIALEAH, FLORIDA
51 East 10th Ave • TUxedo 9-4604

HOLLYWOOD, CALIFORNIA
6511 Santa Monica Blvd • HOllywood 9-8321

PETER DE KARWIN, cinematographer for the Toronto (Canada) Board of Education Film Unit, photographing scenes for educational film series with Auricon Pro-16 camera and Pan Cinor zoom lens. In this field, the cameraman is often both director and photographer.

SOME ASPECTS OF EDUCATIONAL FILM PRODUCTION

Broadening use of teaching films, both in classes and in educational TV, spell "opportunity" for qualified independent film producers.

By JOHN W. BERRIDGE

FILM MAKERS HAVE investigated more fields of human endeavor than have workers in any other medium. They've done so for entertainment, industry, crime prevention, for science and research, and for the furtherance of human understanding. None has been more important, however, than in the field of education and never has there been greater demand for skillful makers of teaching films.

Although the use of motion pictures as a teaching tool is growing at a steady pace there is, in many areas, slow progress being made chiefly because meager budgets do not provide for purchase of teaching films or for engaging local professional film makers to produce such films. This has resulted in a tendency for some educators to make their own films, often with results dubious enough for them to abandon film as too limited for their purposes. But this fallacy more often than not, was due to their inability to differentiate between their own lack of experience and the limitations of the medium. In the last few years though, authorities at Federal, State and local levels have shown a far greater awareness of the potentialities of audio-visual instruction and are becoming increasingly generous with funds. This is opening up a promising market for small as well as the big professional teaching film producer.

There's a big difference, however, between shooting a dramatized documentary for showing to a relatively informed adult audience, and attempting to impart what often turns out to be essentially the same information to audiences which may vary all the way from grade 4 to college or even university level. Surprisingly, the latter is often much harder to do. Why is this so?

First is the necessity of realizing that an educational film may, at some stage, be shown to a large audience or class in a properly equipped auditorium, to a group of thirty or forty in a classroom (under adverse lighting conditions), over a closed circuit television chain to groups of no more than a dozen persons seated before individual monitors (often in full daylight), or broadcast over an educational TV station to home viewers. These are very conflicting demands, particularly from a technical standpoint since the first two demand good contrast and, because of the final image sizes, can accommodate fine detail; and the latter two, which must be low contrast (because of the limited contrast scale of the TV system) must contain an acceptable minimum of detail in order to be of practical use with what is frequently poorly aligned equipment. Fortunately, this problem can be resolved largely in terms of lighting. Consistently high-key lighting throughout the full length of the film results in a finished print that is within TV limitations and more likely of interest of viewers under all conditions mentioned without causing distracting dramatic effects.

Second, it's important to bear in mind what the film is supposed to achieve. It is *not* intended to replace the lecturer except under special circumstances, but to relieve him of the chore of making up or assembling demonstration material as he goes, thus leaving him free for more personal contact with his pupils. In the process it can also perform other functions normally difficult or impossible in the classroom (or home), such as

Continued on Next Page

WE HAVE NO COMPUTERS

It takes something even more complex than a mechanical monster to give you the finest quality prints. It takes the subtle thought and creative imagination of the human brain!

The master craftsmen at Motion Picture Laboratories have the keen minds, the imagination, the know-how, and the personal integrity to give you prints of matchless excellence

That's why fastidious producers—who respect their work—send their films to MPL. They know from experience that, like themselves, we respect their work by giving it our closest personal attention

The final proof of the quality of our work is the fact that our clients have remained steadfastly with us through the years.

In addition to these advantages, MPL gives you 24 hour delivery service anywhere in the United States

Try us. You'll be glad you did

Send us your new film—by AIR—today.

SOUND—EDITORIAL
COMPLETE LABORATORY SERVICES

MPL

MOTION PICTURE LABORATORIES, Inc.
781 S Main Street • Memphis, Tennessee
Phone—Memphis WH 8 0456

The Master Craftsmanship Your Film Deserves

EDUCATIONAL FILM

Continued from Preceding Page

showing physically small objects or experiments to a large group, or things or processes which couldn't be brought into the classroom anyway. This often means shooting close, and one characteristic of educational films is the tight shots and frequent use of extreme closeups often of moving subjects such as small animals or insects. For such educational film production it is necessary to use a camera which is adaptable to extreme close shooting The microscope, incidentally, is finding increasing use in photographing subjects of this kind The camera must also be capable of accepting 'scope attachments and this raises a further problem. Ordinary viewfinders become useless for a fair proportion of educational filming and serious consideration must be given to use of reflex cameras or finders preferably with interchangeable graticules. Since a fair amount of cropping occurs during TV reception, it's an advantage to have the limits of the final TV receiver or monitor visible in the viewfinder of the camera used for photographing films that are likely to be televised

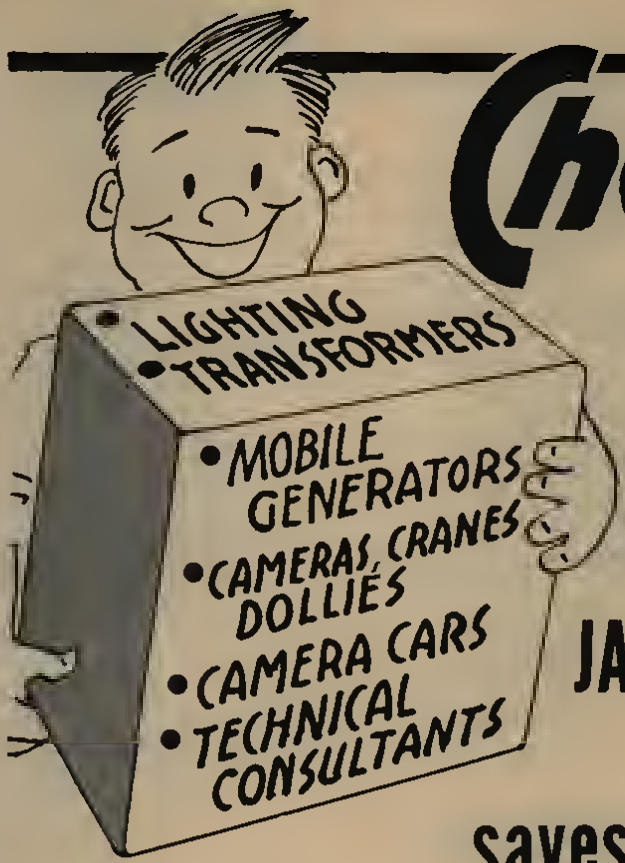
Third is the question of getting into and out of closeup or demonstration shots. The cut-away is the accepted technique, but while this may be quite effective for more sophisticated viewers, it must be used with judgment in films designed for lower-grade pupils This shouldn't be construed to mean that such pupils are incapable of understanding such techniques (mass TV has seen to *that!*), it is only that such dramatic effects may distract from the picture content The zoom shot may often be accused of lacking artistic integrity, but if it's not overdone it does solve the problem of introducing the closeup, particularly if backed up by suitable references in the dialog. It has the attendant advantages of being much cheaper to execute than a trucking shot or cut-away, and of saving considerably on editing time Here again the camera must be capable of accepting zoom lenses if necessary, though this is rarely a problem

Mention of dramatic effect brings up the point that a certain amount of drama can often do wonders for what may otherwise be a somewhat dull script A good story line, both in dialog and shooting, can help immeasurably particularly with younger pupils. Following one or two central characters through a definite sequence of actions can implant information far more thoroughly and readily than a mere visual relation of the facts. Here, good screen-writing comes into force, and it's as important for the writer (who often is the director as well) to be aware of what he can *not* do in terms of the end product, as it is for him to be able to utilize a great many of the more common story-telling techniques.

Furthermore, since the same film may be used for a wide variation in age levels, it becomes vital to appeal to younger pupils without the risk of losing the interest of teen-agers or adults by insulting their intelligence This takes skillful research and writing, and while the necessary close insight into the actual intelligence levels of the various age groups is often available through close cooperation with educators themselves, it's still the writer/director who must translate this into screen terms

Again, the nature of the subject itself may dictate the method of presentation of the story. For the more tangible subjects, such as physics, engineering, etc., having a competent demonstrator answering questions put by one or two children is a most effective technique This has proved successful with TV's "Mr Wizard," a series which could be produced equally well (though differently) by film methods This demands a demonstrator with a good knowledge of educational showmanship as well as one who understands the potentialities of film as a teaching medium And for best results, both he and his questioners must be good actors. A strained performance delivered by even a top lecturer can ruin the best production, simply because of his noticeable self-consciousness. In educational filming, the subject matter must always be the star

For more intangible subjects, puppet characters can be used to great advantage; completely abstract matter is often best handled by animation Mathematics is a subject almost impossible to handle any other way Walt Disney's "Donald in Mathemagic Land," which is an excellent example, has rapidly become something of a classic because of its universal appeal Other subjects may demand other



Choose the ONE PACKAGE deal from JACK A. FROST!

★

. . saves you TIME and money on PRODUCTION RENTAL needs! . . . .

Gives you Complete, Coordinated SERVICE from START to FINISH!

JACK A. FROST

COBO HALL OFFICE: 401 Washington Blvd. Rm. 3143, WO 2-1255, Detroit 26, Michigan

MAIN OFFICE: 234 Piquette TR 3-8030, Detroit 2, Michigan

CANADIAN OFFICE 6 Showbridge, BElmont 2-1145, Toronto, Canada

SEE HOLLYWOOD CAMERA CO.

FOR FINE USED EQUIPMENT

WALL 35MM camera, four lenses two 1000' mags motor finder, mattebox, cables cases, tripod ... $1795 00

ACME 35MM Animation Camera stop motion motor, Unit 1 shuttle ... $1900 00

AURICON CINE VOICE with cables case amplifier, head set mike, galvo Plus 400' Magazine $ 785 00

AURICON EIF-20 FINDER, like new $ 165 00

15" F5 6 TELE for ArriRex $ 375 00

17½ 70 PAN CINOR, brand new $ 220 00

ZEISS 16MM MOVIKON, three Sonnar lenses, case, dissolving shutters $ 225 00

BOLEX H-16 with Octometer, thru-lens focus 25mm Lytar like new $ 225 00

MITCHELL 110 V Hi-Speed Motor w/tach $ 325 00

B&H 35MM Model D Printer $ 32 50

DE VRY 16MM Arc Projector $ 895 00

B&H 70 S 16MM High Speed Camera with hi-speed motor, 128 FPS $ 395 00

BOLEX REX 400' magazine synch motor 1" Switar lens, base footage counter, like new $ 675 00

35MM EYEMO modified for single frame with 2" lens and case $ 249 50

HERRNFELD 35MM Printer with fader and filter changer $1475 00

ARRI 35MM Step Printer with punch tape light changer $1350 00

BURCHELL 35MM Printer $ 235 00

MODEL D MOVIOLA with take up and supply spindles, foot switch case $ 189 50

DEPUE Light Change Board, Model 112 Fits most printers $ 550 00

NEW ACE 35MM Viewer with counter A big discount

B&H 16/35 Hot Splicer $ 275 00

MOVIOLA four gang 35mm synchronizer with counter Excellent ... $ 135 00

NEUMADE AF 1 Micarta stripping flanges $15 00 list only $ 9 00

NATIONAL Cine Clapboard New $ 22 00

HOLLYCAM Clapboard New $ 9 95

16MM x 400' Magazine Brand new— B&H $129 00 Mitchell $ 104 00

B&H FILMO 70 HR., w/400' mag 115 V motor 1' F1 9 lens Brand new $ 695 00

16MM x 200' Mag for Cine Special $ 375 00

16MM x 100' Mag for Cine Special Brand new Now only $ 295 00

35MM x 2000' Mitchell Mag $ 225 00

35MM x 400' Mitchell Bi-pack Mag $ 220 00

16MM x 400 Maurer Mag $ 95 00

AKELEY GYRO Tripod with boot Brand new List $1100 00, only $ 795 00

CINE SPECIAL Tripod $ 29 50

$1200 UHLER 16MM Printer $ 695 00

B&H TRIPOD with gear head $ 225 00

CINE SPECIAL 110 V sync motor $ 90 00

B&H 2709 High Speed motor $ 195 00

BLIMP for Cine Special $275 00

16MM 2 gang Synchronizer $ 94 00

NEW MITCHELL 35mm Mattebox $ 225 00

MEYER HANCOCK Finder $ 95 00

CAMART TV Mike Boom $ 199 50

CUNNINGHAM 35MM Pilot Pin Registration Movements only $ 395 00

BELL & HOWELL Unit I Movements $ 575 00

HOLLYWOOD CAMERA COMPANY
6838 Sunset Blvd., Hollywood 28, Calif.
Phone HO 6-1318

techniques, and a Grade 10 film about the weather could use live footage, stop-motion and animation shots in nearly equal proportions One of the keys to successful educational film production is knowing which production technique best suits the subject. then utilizing that technique—be it live action, puppets, animation stop motion, slow motion. etc—for the most effective result.

There are, of course, possible markets for educational films outside of this continent. Today more and more nations are basing their educational methods on those now practised in the New World. usually with great assistance from U.S. educators Thus the chances of a single educational film achieving world-wide distribution are increasing by the day, and these markets are getting more demanding in their standards Education is truly a big market for film-makers ■

TAPE RECORDERS

Continued from Page 739

fier, or to any other recorder The low output impedance eliminates most problems of electrical adaptation

The three-pin micro socket has a bayonet lock which prevents accidental disconnect of the mike cable. The input impedance of 50 to 200 ohms permits use of mike cables of almost unlimited length One of the pins in this connector supplies power for the optional MV 5 microphone preamplifier or for a transistorized condenser microphone.

There is no dearth of visual indicators. The "Empty/Full" indicator shows at a glance the amount of unused tape A precision VU meter indicates the level of modulation in numerical values during both recording and playback for accurate control of the recording level During rewind. the VU meter shows battery voltage thus providing an immediate built-in check on battery power reserve The volume control is calibrated in decibels and can be easily adjusted with one finger, even with gloved hands. The six position function selector is logically arranged to avoid errors and accidental erasures The capstan contact idler is mechanically linked to the function switch

The simplification of all these controls is a factor beneficial to the non-technical operator—the lone cameraman-film-producer. for example, who works in the field unaided and desires synchronized sound for his films having the utmost professional quality. Here the Stellavox needs no complicated lash-up to go to work. Plug in the microphone and you are in business It's that simple. And a built-in compressor limiter of advanced design even eliminates the need to ride gain, further simplifying use of the machine by the one-man film maker.

The recorder batteries may be recharged very simply by connecting the charger—an accessory item—to the monitor socket and the A C cord to any 50/60 cycle 110-to-180 volts power supply. or to a 12-volt D C source A car or plane battery, even ordinary dry cells, will recharge the Stellavox batteries completely in 7 hours and the recharging operation requires no attention. the charge is shut off automatically when charging is completed

A set of four sealed storage batteries, rated at 2 volts. 1 ampere hour each, will operate the Stellavox for 5 to 7 hours per charge When replacement is necessary, a set of new batteries may be installed in the recorder in just a few seconds

Cont'd on Page 746

NAGRA SLP Synchronizer This equipment enables the Nagra to resolve its own recordings —makes it drive at the right speed to match that of sprocket-driven recorders, and holds that speed constant

Which twin is the duplicate?

If there's any difference between the original and the Anscochrome® "547" dupe shown above, odds are that the Anscochrome dupe is an improvement. "547" gives excellent sharpness *and* contrast values. This high-speed duplicating material gives both large and small volume duping operations high quality with a minimum investment in equipment (you process in regular Anscochrome chemicals). Ask your Ansco Man for complete information about "547".

ANSCO—America's first manufacturer of photographic materials—since 1842

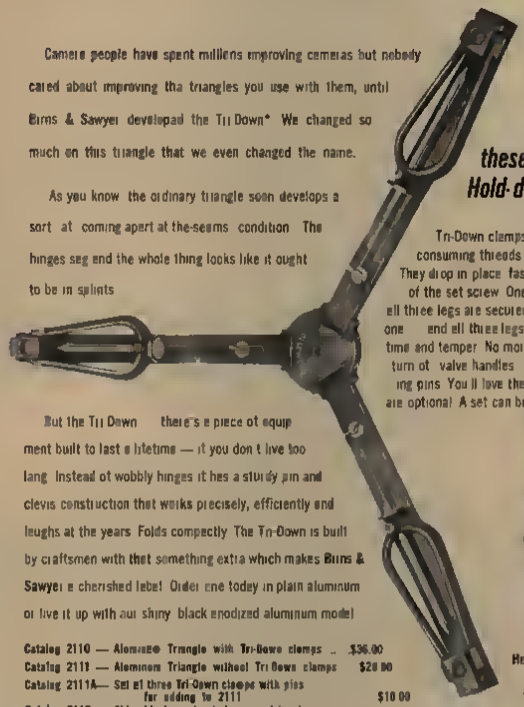
Ansco
Binghamton N Y

Anscochrome
547

For three pins I'd buy a Tri-Down!

Camera people have spent millions improving cameras but nobody cared about improving the triangles you use with them, until Birns & Sawyer developed the Tri Down* We changed so much on this triangle that we even changed the name.

As you know the ordinary triangle soon develops a sort of coming apart at the seams condition The hinges sag and the whole thing looks like it ought to be in splints



LOOK at these fast, FAST Hold-down clamps

Tri-Down clamps have no slow time consuming threads on the holding pins They drop in place fast Lock with a twist of the set screw One, two, three and all three legs are secured Fast Three, two, one and all three legs are released Saves time and temper No more tedious turn turn turn of valve handles No more bent holding pins You'll love them Tri Down clamps are optional A set can be added at any time

But the Tri Down there's a piece of equipment built to last a lifetime — if you don't live too long Instead of wobbly hinges it has a sturdy pin and clevis construction that works precisely, efficiently and laughs at the years Folds compactly The Tri-Down is built by craftsmen with that something extra which makes Birns & Sawyer a cherished label Order one today in plain aluminum or live it up with our shiny black anodized aluminum model

Folding pins drop into place, fast. Twist at the set screw locks

Catalog 2110 — Aluminum Triangle with Tri-Down clamps .. $36.00
Catalog 2111 — Aluminum Triangle without Tri-Down clamps $28.00
Catalog 2111A— Set of three Tri-Down clamps with pins for adding to 2111 $10.00
Catalog 2112 — Shiny black anodized aluminum triangle with Tri-Down clamps $38.00

*Trademark applied for

See your local franchised dealer or write

BIRNS & SAWYER Cine Equipment
6424 SANTA MONICA BLVD. • HOLLYWOOD 38, CALIF. • HO 4-5166 • CABLE, BIRNSAW

Filming in Europe?

PRODUCTION FACILITIES,
CAMERA EQUIPMENT HIRE,
SOUND RECORDING,
TECHNICIANS, TRANSPORT,
16 OR 35MM, ANYWHERE.

SAMUELSON FILM SERVICE LIMITED

Just Cable "SAMCINE, London"

The recorder will accomodate standard ¼-inch tape reels up to 3⅜" in diameter. These hold 460 feet of tape that provide 12 minute of recording time

The Nagra III uses a low-speed electrodynamic motor, the speed of which is stabilized by a servo-amplifier controlled by a device measuring the capstan speed directly and accurately The capstan forms part of the motor spindle, hence there is no transmission to wear and affect tape travel in the course of time

The Nagra III has three heads: one for erase, one for recording and one for playback, enabling the instrument to be used for simultaneous recording and reproduction, i.e., the signal just recorded can be monitored through earphones.

Lip-sync sound for short sequences of less than one minute can be successfully recorded with the Nagra III without need for any syncing device if the camera used is sufficiently stable in speed (having a sync motor or motor with electronic speed stabilization) Where no such camera is available then a synchronizing device such as the three previously mentioned must be used

Unlike the Stellavox which is limited to 3⅜" reels of tape, the Nagra III accommodates reels up to 5" in diameter with the instrument closed, and 7" reels with the instrument open This affords recording times of up to 15 minutes for the 5" reels, and up to 30 minutes for the 7" reels for synchronized sound.

Other notable features include provision of a level check by a meter having a 10 msec integration time, a warning device which injects a whistle into the phone output when battery voltage is too low to insure speed stability, a modulometer which acts as a battery check meter when the main selector is switched to loudspeaker-playback, on "Hi-Fi" playback the microphone input is also connected into circuit so that commentaries can be added to the retransmission of the recording or the instrument can be used as a reporting amplifier

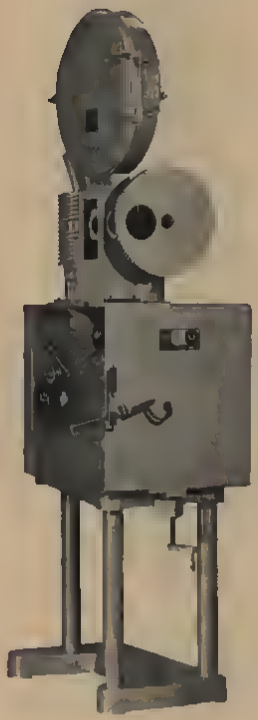
In a future article we shall go into the procedures of using these recorders in actual film production, explain the function of the sync generator, and describe the three mentioned in this article along with the Ryder Wireless Sync System ■

Inspect every foot before it leaves your plant with the HFC High Speed Heavy Duty Inspection Projectors -- 16mm & 35mm models now available.

NEW

The projector is a converted front shutter Simplex with e two pin intermittent 16mm or 35/32 film runs at a speed of 144 ft. per minute while 35mm film runs at a speed of 165 ft per minute

1 A variac controls the light intensity
2 A 500 watt lemp is used for 16mm end a 1,000 watt for 35mm (a blower is used to cool the lemphouse).
3 A 2½ inch projection lens is fumished with each unit
4 A start-stop lever controls the power to the lamp and motor
5 The magazine and take up core takes up to 3,000 ft of film
6 Upper guide rollers are made to handle the film from either direction of the feed reel
7 A free wheeling take off flange is provided in the magazine
8 A lamp near the takeup reel permits hand inspection of the film prior to takeup



NUOVO

Questi proiettori sono Simplex transformati, otturatore al fronte, meccanismo di scatto di due punte. La velocitá di proiezione in 16 o 35/32mm e di 144 piedi per minuto, e in 35mm, di 165 piedi per minuto.

1. Controllo manuele della luminositá della lampade.
2. Lampade di 500 watt per 16mm e di 1000 watt per 35mm
3. Obbiettivo di proiezione di 2½".
4. Maniglia per controllo di motore e lampada di proiezione
5. La cassetta porta pellicole puo contenere 3000 piedi
6. I rulli superiori di guida sono construiti per operare con film provenente di ambi leti della bobina svolgitrice.
7. Disco con montatura sporgente nel magazzino
8. Una lempedina illumina le bobina avvolgitrice, permettendo l'ispezione manuale del film prima che si avvolga nel proiettora

NOUVEAU

Le projecteur contient un obturateur Simplex anterieur transformé avec deux clavettes intermittent Les films de 16mm ou 35 32 tournent avec une vitesse de 144 pieds à la minute, tandis que les films de 35mm tournent avec une vitesse de 165 pieds a la minute.

1 Le regulateur de voltage d'intensite d eclairage
2 La lampe de 500 watt est nécessaire pour les films de 16mm, et de 1000 watt, pour les films de 35mm (un ventilateur est mise pour rafraichir la chambre de la lampe)
3 L objectif de 2½ est instalé
4 La manette de mise en marche et d'arret controle en meme temps la lampe et le moteur
5 La boite de films avec noyau peut contenir 3000 pieds du films
6 La roue supérieure est construite de manière de racevoir le film dans les deux directions, nourrie par la bobine centrale
7 Une roue est instelée pour libérer rapidement le film de la boite
8 Le lampe se trouve pres de le bobine recepteuse, et donne toute facilite pour inspecter le film e main dans le projecteur

NUEVO

Esta maquina es un proyector simplex convertido, obturador al frente y movimiento intermitente e doble grifa Para 16mm o 35/32mm, la velocidad fija de proyección es de 144 pies por minuto, para 35mm es de 165 pies por minuto.

1. Un reostato controle la intensided de la lampara de proyección.
2. Para 16mm se use una lampara de 500 watt, y una de 1000 watt para 35mm (un chorro de aire ventila las lámparas en ambos casos)
3. Cada unidad esta provista de un lente de proyección de 2 pulgadas y media.
4. Une palance de control opera el motor y la lampara simultàneamente
5. Capacidad de proyección rollos de hasta 3000'.
6. Los rodillos de guia superioras operan con la pelicula en ambas direcciones.
7. La tapa de la bobina de carga es desenroscable
8. Una lámpara ubicada junto a la bobina de toma permite la inspección manuel de le pelicula antes que se rabobine en la bobina superior del proyector.

designers and manufacturers of film and video tape ed ting equipment

HOLLYWOOD FILM COMPANY

REELS / CANS / CASES

956 N Seward, Hollywood 38, Calif, HO 2 3284 • 122 W Kinzie, Chicago 10, Ill, 644-1940 • 524 W 43rd St, N Y 36, N.Y, LO 3-1546

SAVE MONEY
When Filming In Europe
By Renting Your
Camera Equipment From
CHEVEREAU
PARIS, FRANCE
We Service The Entire Continent
CAMERAS, including the
Mitchell BFC 65mm
CRANES
DOLLIES
20 RUE DE LA CHINE
PARIS 20, FRANCE
Tels MEN 9472 PTR 5104
Cable, Cameralec Paris

Automatic Daylight Processing
DEVELOPING TANK
• Processes up to 200 Ft
• 8mm-16mm-35mm-70mm
• Movie—X-Ray—Microfilm
• Motor-driven, portable
• Uniform Density Assured
• 400 Ft Tank Available
FILM DRYER
• Motor driven—Heated
• Speedy drying
• Automatic shrinkage allowance
• Stainless steel and aluminum construction
• Easily assembled without tools
• Compact Portable
Guaranteed. Write for Free Literature
Micro Record Corp. 467-14 South Ave Beacon, N Y

PATHE PRESENTS
THE WEBO-M
16 MM REFLEX
PATHE
PRODUCTS, INC.
9 Pleasant Street
Providance 6, Rhode Island
Sole U.S.A. Agents for Pathé Société
Commerciale et Industrielle

SHOESTRING MOVIE MAKERS

Continued from Page 733

keep the film in styrofoam cases in the shade and usually where the light ocean breeze would cool it. Mike Hinn, operator of the Quartz Hill Airport in Palmdale, California, flew down each weekend to pick up the exposed film and to deliver a print of the previous week's work from Consolidated's laboratory in Hollywood. This afforded the Brookes the luxury of viewing their "dailies" while on location.

The climax of the production was the launching of the boat, which Ralph and Bri had built themselves in Hollywood and brought to San Felipe by trailer and Jeep. Ralph makes no pretentions of being a boatwright and he had no faith in the boat as a boat, or whether it would stay in one piece, or, for that matter, float. The entire sequence of the tide and the boat became therefore, a crisis and both Bri and Ralph were grimly aware that it would have to be a one-shot go. To add to their general consternation and feeling of doubt, the townspeople, most of whom are thoroughly familiar with boats and the sea, made their judgement quite clear that the boat would neither hold together nor float, and that only disaster would result. It was with grave misgivings that a local fisherman with a skiff and outboard motor finally agreed to tow the monstrosity out into the choppy waters. However, as with all good stories, by accident of fate and faith the boat did float and the sequence of action was recorded in one shot.

Bri edited the film at Consolidated Film Industries' laboratory and the liquid gate blow up by Adrian Mosser at Cineservice has not to date been detected as a blow-up by anyone viewing it cold.

Bri and Ralph now found themselves with a half hour film which was considered too long for a short and too short for a feature. Not willing to compromise with the story by adding or cutting, and on the premise that if they had a quality picture the length would not interfere with its value, they decided to book it independently into Art theaters to gauge reaction. "The Magic Tide" played at the Four Star Theater in Los Angeles where it received nothing but the highest praise from both critics and reviewers. It was further tested in several other theaters

MOST
VERSATILE
LIGHTING
SYSTEM MADE
(for movie
and still)
LESS THAN
$25.00
MOBILITE®
Portable Sunshine®
SYSTEM
Powerful quartz lamp in scientifically designed reflector throws brilliant wide-angle beam, no hot spots. Maintains original brightness, correct color temperature throughout long life. Snap-on Mobilite Diffusar softens light for close-ups, ideal for children. Full 90° bounce adjustment. Self-contained, hand detaches in seconds, mounts on still camera with special shoe supplied.
NOW!
For pro and advanced amateur
MOBILITE
CLAMP-ON UNIT
Identical head as described above, on double-ball jointed spring clamp. Mounts anywhere for fill-in, side, back and bounce lighting.
Less than $23.00
with Mobilite Diffuser
PRODUCT OF
FLEX ELECTRIC
FLEX ELECTRIC
PRODUCTS, INC.
39-08 24th Street
Long Island City 1, N.Y.

in the Southern California area and was equally-well received. It became one of the first motion pictures to receive commendation from the newly-formed Youth Film Foundation

With this proof of the validity of their convictions, the Brookes turned the picture over to Crown International for distribution and it has been teamed with such quality films as "King of Kings," "Spartacus" and "Moon Pilot." not as a short, but exclusively as a featurette

This enterprising husband-wife team is presently producing another color film which they will offer as a fifteen-minute short. after which they plan to make another Ralph and Bri Murphy Brooke are now firmly convinced that in essence. having a story to tell and being able to tell the story well is still a pretty good formula for a successful motion picture ■

CINEMICROANALYSIS

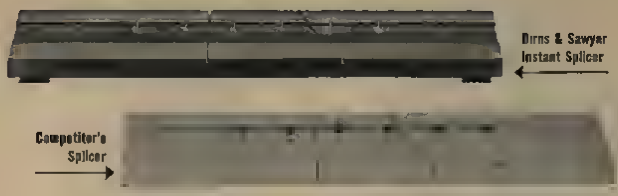
Continued from Page 729

by Lefeber, He has been developing the techniques under the guidance of Dr. Charles Pomerat, research director at the Pasadena Founadtion for Medical Research and one of the authorities and pioneers in the field of cellular biology. Dr. Pomerat, has been using motion picture time-lapse studies for 15 years.

The filmed sequences of cellular activities produced at the Foundation are used throughout the world in lectures and classes given by Dr. Pomerat to scientific and medical groups. By expanding the system for producing these films at the Foundation, even greater use of movies showing living cell cultures in action has been facilitated.

Since his first affiliation with Dr Pomerat, C. George Lefeber has photographed hundreds of motion pictures of living cells by photomicrography and time-lapse cinematographic techniques At 36, he is one of the few men in the world qualified in biological cinematography and is a recognized authority in his own right. ■

Many professional cameramen focus by eye, but Hollywood production cameramen invariably use a measuring tape regardless of the fact that their cameras possess highly magnified and very accurate ground-glass focusing finders. Eyes vary, lenses do not.



Can YOU tell value?

Which splicer is the better buy?

They both look similar It's not surprising We copied the design from a fellow in New York who copied it from a fellow in Los Angeles But there are several reasons why the Burns & Sawyer splicer is better, although it costs no more

SOME CAST

Other splicers are cast Castings vary in size, accuracy We tool ours from one piece of solid bar stock It's stronger Won't break if you drop it And the paint won't chip off because there isn't any paint to chip The Burns & Sawyer splicer is anodized in a beautiful, permanent, eye resting, spring green You can see in the above unretouched photo (of the competitor's painted splicer) how after a little use, it begins to look like an unmade bed And who wants to splice film in an unmade bed?

GETS YOU RIGHT HERE

Then take the pegs In the Burns & Sawyer splicer they are brass, individually turned accurately pig spaced There is typical Burns & Sawyer attention to detail that warms the cockles of your heart Its quality throughout Quality isn't always easy to see But there is an easy, sure way to get it. Look for the Burns & Sawyer label Best place to find a Burns & Sawyer label is on Burns & Sawyer equipment

HERE'S A TIP

Buy a Burns & Sawyer Instant Splicer to keep by each projector If film breaks it can be mylar-spliced instantly, returned to service in seconds Burns & Sawyer Instant Splicers are available for 16mm or 35mm film, both sound and picture Buy a bagful (They come packaged one to a bag)

Catalog 2668—16mm Splicing Block. $ 9.50 **Catalog 2669—35mm Splicing Block. $12.50**

See your local franchised dealer or write

BIRNS & SAWYER Cine Equipment

8424 SANTA MONICA BLVD. • HOLLYWOOD 46, CALIF. • HO 4-5186 • CABLE: BIRNSAW

WEST COAST MOTION PICTURE

Sales and Service

KUDELSKI NAGRA

Professional

LIP-SYNC TAPE RECORDER

MAGNETIC SALES CORP.

1147 North Vine Street Hollywood 38, California

ELGEET
ZOOM
NAVITAR

Elgeet offers Vidicon tateviston cameras and 16mm cameras the first Zoom Navitar, a menually controlled 4:1 zoom with a 20mm to 80mm range—f.1.8! This new lens achievement is opticelly compensated to hotil focua thmugh the entire zoom action. Fourtean atements—covers Vidicon format—resolves 600 lines—linear zoom action by ring—hst price $400. For Information, write for Catelog 2080-CZ18.

Elgeet OPTICAL COMPANY, tNC.
303 Chile St., Rochester 11, N. Y.

AIR FORCE FILMING PROJECT

Continued from Page 737

wherever possible, the informal "person-to-person" live television technique of shooting with multiple cameras. "The William Tell Story" recounted the history of the Tactical Fighter Weapons Meet, analyzed its significance and included a preview of events to be telecast on subsequent days. "The Pilot" presented an intimate view of a typical day in the life of a fighter pilot, and emphasized the tremendous amount of planning needed to successfully complete each mission. "They Live in Fame" detailed the combat experiences of four World War II and Korean War aces, comparing their flight tactics to those involved in flying present-day high-speed aircraft. A special documentary film paid tribute to the unsung heroes of the Air Force ground crews—the mechanics and electronic technicians who help keep the planes in the air. Another filmed documentary gave a comprehensive view of the complex range of weapons used in "William Tell '62."

In order to relay the drama of the competition to an estimated 250,000 television viewers in the Las Vegas area, a special VHF TV band was allocated to the Air Force for the duration of the meet. Designated as Channel 5 and operating under the call letters "WMTL," the primary function of this television facility was to afford an opportunity for competitors who were not flying at the time to observe the tactics, maneuvers and events on the ranges where live ordnance was being fired, and also to provide the judges and other interested military observers with a capability for following those portions of the meet taking place in remote areas.

Thus operating what is believed to have been the largest non-commercial television system ever installed, the Air Force began on September 15 to televise Tactical Air Command missions over an area of nearly 1,000 square miles, shooting from altitudes as high as 30,000 feet. The intricate installation required 20 television cameras, five microwave links, and 125 miles of cable. One hundred television receivers especially set up for military personnel, plus most of the home sets in the Las Vegas area received live video coverage of the strafing, bombing and guided missile firing missions by the top TAC units.

In addition, the annual Air Force Association convention in Las Vegas, held concurrently with Project William Tell, received television coverage of the meet and was also the subject of TV programming over the special network.

The complex technical facilities of the television system were installed and maintained by the Dage Division of Thompson Ramo Wooldridge under contract to the Air Force. Dage engineers worked for more than two months prior to the meet installing the tons of cameras, controls, generators, power plants, mobile consoles, broadcast transmitters and other required mechanisms.

The television equipment was operated by APCS cameramen and electronic technicians, assisted by a group of airmen from the Air Transport Command's educational television branch. Studio broadcast facilities and the master TV control center were located at Nellis Air Force Base. At Indian Springs, more than 40 miles away, a range TV control center was set up to handle remote control of desert cameras placed in the heart of the bombing and strafing target areas.

The television cameras used on the range had been specially built to withstand tremendous shock, hot sun, freezing temperatures, rain and dust. They were the same model as the cameras furnished by Dage for all operational Atlas missile bases throughout the country. Designated RGS 10's, these all transistorized cameras deliver 700-lines resolution under the most extreme environmental conditions, yet are less than 7 inches high and only 16 inches long. They are completely compatible with conventional standards.

Spectacular aerial coverage of the events was made possible through the use of miniaturized Model 333 Dage TV cameras that weighed but 4½ lbs. and about the size of a cigar box. Hand-held by operators seated directly behind the pilots of F-100 jet "chase" aircraft, these midget video cameras were used to track air-to-air and air-to-ground missiles directly to their targets. Signals from these airborne cameras were beamed to microwave links on the desert floor by means of transmitters located in the noses of the aircraft, utilizing small triangular antennae. To insure the maximum signal from these transmitters, technicians on the ground "locked on" to the aircraft with microwave dishes and tracked them across the sky.

SYNCHRONOUS SOUND FOR MOTION PICTURES

STELLAVOX

Swiss Precision Tape Recorder

★ **HI QUALITY**
40-1200 cps ±2 db

★ **LIGHT WEIGHT**
Less than 6 lbs

★ **SELF-CONTAINED POWER**
New Dryfit rechargeable storage cells

★ **AUTOMATIC or MANUAL VOLUME CONTROL**
New a v c

SYNCHRONIZATION
With hi-frequency bias by Ranger, Pilote or Echelon Method

ACCESSORIES
Remote Control by Wire or Wireless, Eveready Case, Automatic Charger, Panel Light

***$610.00**
Plus Accessories

NEW UNITED STATES EXCLUSIVE DISTRIBUTOR

MAGNETIC SALES CORP.

1147 NORTH VINE STREET — HOLLYWOOD 38, CALIFORNIA

On the ground, by means of a unique "TeleTran" system, roving television cameramen with 12-pound, 24-hour battery operated transmitters on their backs brought the television audience on-the-spot interviews with pilots, aircraft loading technicians and other flight line personnel. Other TV camera positions spotted throughout the base assured dramatic viewing of take-offs, landing, special aerial events and up-to-the-minute scoreboard results of the competition.

On the base a former storehouse was converted into a compact but complete studio for handling live shows. It was equipped with studio broadcast cameras carrying zoom lenses and large viewfinder systems. Sets were created and a staff of 50 Air Force specialists including cameramen, producers, writers and directors (many of them top-ranking network professionals called back into uniform as reservists especially for the project) were employed in the production of both live and filmed shows for telecast from the studio.

Master Control, also located in the same building, monitored video cameras scattered throughout the base, cameras at the ranges, local airborne

picture and sound editors

rewinders

video tape

sound readers

synchronizers

crab dolly

first IN EDITING EQUIPMENT

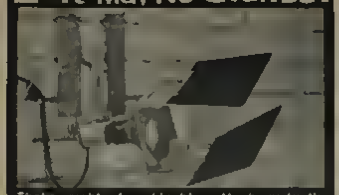
From the time motion pictures "learned to talk" Moviola has earned acceptance as the word for professional film editing equipment. Moviola is keeping pace with the changing needs of the Motion Picture industry with new devices such as:

- Crab Dolly for improved Motion Picture and TV Camera mobility
- 70 mm Viewer for the Photo Instrumentation field

moviola
manufacturing co.

5539 RIVERTON AVENUE • NORTH HOLLYWOOD CALIF • PHONE TRIANGLE 7 2173

LOOK Ma, No STaNDS!

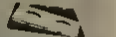


That's right. Lowel-Lights attach virtually everywhere, without stands. Shooting in cramped quarters? Flying to location with minimum equipment? Lowel-Lights will save the day. They tape up on walls with non marring Gaffer-Tape, clamp onto pipes, furniture, moldings, nail onto objects, balance on level surfaces. Work great on stands, too! Units fit in your pocket, so do the folding Barn-doors which attach instantly — without tools — to all R40 reflector bulbs. Lowel-Light system saves so much set-up time, it pays for itself the first day of location shooting. Fastest, most versatile, most compact incandescent lighting equipment ever designed!

Fibre case 9 x 12 x 4 with 5 Lowel Lights, Gaffer Tape, space for 5 Barndoors $34 50

Vulcanized fibre case 14" x 22" x 6" with 6 Lowel Lights, 6 Barndoors, 2 P I C stands, 3 25 extensions, Gaffer Tape holders for 6 R40 bulbs $124 50

Single Lowel Light with porcelain socket, neoprene cord, Gaffer-Tape $6 95



Lowel Light R40 Barndoor $5 75

Gaffer Tape 12 yds $1 95 / 30 yds $3 95

LOWEL LIGHT PHOTO ENGNR., 629 W. 54th ST., N. Y.

Specialized

LIGHTING EQUIPMENT

for

MOTION PICTURE, STILL

and

TELEVISION STUDIOS

Write for A Copy of Our

Catalog J on Your Letterhead

Mole-Richardson Co.

937 NORTH SYCAMORE AVENUE

HOLLYWOOD 38, CALIF

cameras, as well as two cameras set up at the Las Vegas Convention Hall and joined to the system by an additional microwave link. Transmission from Nellis was made possible by a special antenna located on the water tower of the base. Included in the facilities were video-tape and kinescope recorders which provided a capability for pre-recording live shows for later transmission, as well as recording immediate events that would have a training-aid value for Air Force personnel long after the conclusion of the meet.

A crack team of twenty cameramen from the 1352nd Photo Squadron at Lookout Mountain Air Force Station in Hollywood, headed by Director of Photography George D. "Doug" Wood, covered the meet in stills and 35mm motion pictures, both color and black and white.

In tracking the spectacular action on the East and West desert ranges, cameramen used two converted M-45 machine gun mounts, each of which carried a television camera secured to its top shelf as well as a Hulcher instrumentation camera shooting 2¼ x 2¼ sequential stills on a continuous roll of 70mm film at speeds ranging from 5 to 20 frames per second. In addition, each mount supported a bank of three 35mm Mitchell cameras equipped with super telephoto lenses ranging from 12 inches to 48 inches in focal length. With all cameras zeroed in to coincide with the cross-hairs of binocular viewfinders, the tracking operators kept the aircraft centered through a wide range of intricate maneuvers, rocket drops, rocket firings, bomb drops and nuclear weapon delivery.

Four airborne motion picture cameramen flew almost continuously to get air-to-air and air-to-ground film coverage of the various events, while on the desert floor, remote cameras set close to the targets were triggered by solenoid relays wired to control boxes situated five miles away. During the meet a number of cameramen were deployed on the flight-line at Nellis to film the loading of weapons of various types onto all types of aircraft. The takeoff of each aircraft was filmed as part of the overall documentation of the meet.

Meanwhile, several cameramen and an editor were kept busy shooting and cutting film clips of the various events for immediate TV release through Los Angeles network outlets. Other clips featuring individual pilot competitors were made up for telecast by their local hometown stations. A production crew set up ColorTran lights in the base theater to film the opening of the meet and addresses by high ranking officers. Another crew wrestled into position three 10,000 watt lights, five 5,000 watt lights, two cone lights plus 900 feet of cable to illuminate an area of the vast Convention Hall for filming the unveiling of the revolutionary X-20 "Dyna Soar" space aircraft.

The combined film and television coverage of "Project William Tell 1962" represented the most ambitious undertaking of its kind ever attempted by crews of the Air Photographic and Charting Service. To record the immense scope and variety of concurrent action required months of meticulous planning and the most precise coordination of activities on the spot. The complete success of this complex operation is a striking tribute to the skill and dedication of APCS personnel.

In a follow up article, the author will describe methods and techniques utilized by APCS motion picture cameramen in shooting a wide range of subject matter under varying conditions all over the world. ■

ELECTRONIC FILM EDITING

Continued from Page 730

Designed primarily for editing two camera coverage of news events or other filmed material for television, it permits intercutting of selected shots or takes from each camera footage and electronically cues each cut so that on playback only the selected takes are shown, and for the time interval desired as determined by the editor. Viewing of the footage is by means of TV monitor screens, which are part of the Teleduo system (See photos).

Besides incorporating a maze of mechanical and electronic gadgetry, the Teleduo has two primary monitors that show the picture images of each film as it unwinds and travels before the editor on the Teleduo console. A third or principal monitor shows the selected cuts. It is on this screen that the edited version of the production appears in continuity and accompanied by sound in sync.

The equipment, as pictured here, operates as follows: the perforated (sprocketed) magnetic tape and the two reels of 16mm film are mounted on the flat table of the Teleduo console and

are transported in unison, as the editor sets the equipment in motion by means of foot pedals, which enable him to move the film forward or in reverse and at various speeds. All three reels can be positioned to run in sync, yet each reel can be moved individually by hand in the cutting procedure as required.

By means of a prism, images from each film are projected to two Vidicon closed circuit cameras, which relay them to the two primary monitors for study. By means of a push button, the editor directs the image of any selected scene from either film to the third monitor. The scenes that are seen here comprise the edited selection and ultimately the fully edited picture in the preview state. Because the sound for the two-camera production has been recorded on a single, perforated magnetic tape, this tape provides the audio for both camera films as they are cut and viewed on the Teleduo. It also provides the cueing medium for scene or cut selection, as we shall presently see.

After a production has been electronically edited by this method, the reels of tape and film are rewound to starting position and run again. On this run, the production—as seen on the third monitor—appears full edited.

The Answer to Zoom & Telephoto Lens Tripod Problems!

Silicone Dampened

HYDROFLUID BALL-LEVELING

Pan & Tilthead Tripod

AN N-C-E ORIGINAL IN TRIPOD STYLING AND PERFORMANCE

Larger Silicone Dampening Area than any Tripod in its class and price range

- Designed for professional cameramen
- Velvety smooth, jerk-proof pan and tilt action utilizing the dampening effect of silicone
- Sturdy aluminum construction, weight 21 lbs
- Silicone loaded—temperature range 130 + 500F
- Precision ball-bearings. Mounted on pan and tilt shaft for smooth action and alignment.
- Pan 360°—Tilt 80° For all cameras 40 lbs or less.
- First tripod of its kind with ball type leveling at bottom of base with positive lock at NO EXTRA CHARGE
- Tripod base of seasoned V-type maple-wood legs with self-aligning leg locks

Positive quick finger camera lock — variable tension adjustment pan and tilt locks —spirit level—telescopic pan handle with variable angle adjustment—right or left hand position

"HYDROFLUID" TRIPOD FOR TV Vidicon—16 Mitchell—Maurer—Cameraette—Arriflex 16/35—Auricon (Cine-Voice 600-1200) Cine Special—Eyemo—Filmo—Cinnifinx

PRICE WITH BASE **$369.50**

BABY TRIPOD	$89.50
HIGH HAT	$32.50
CASE	$25.50
BOOT & POINT COVER	$15.00

NATIONAL CINE EQUIPMENT, Inc.

2D9 WEST 46TH STREET, NEW YORK 36, N. Y. — Circle 6-0346

West Coast Sales: GORDON ENTERPRISES, No. Hollywood, Calif.—POpular 6-3725

Canadian Representative ALEX CLARK, LTD. Islington, Ontario

Acmade Foot-Operated Splicer with Tungsten Tipped Blades

Combination 16mm-35mm Model

$1495

This splicer is constructed as is usual with ACMADE products, of the finest materials and workmanship. All castings are of the best quality and the top body and cutter arms are seasoned to prevent distortion after machining. The machining is carried out to limits of ± .0005" in order that the cutter blades shall close in a dead parallel manner. The cutter blades are made from stainless steel with Tungsten Carbide inserts, and afterwards ground lapped and polished to a limit of ± .0002" thickness and the cutting edges relieved by 1°. The Tungsten Carbide inserts will have indefinite life and will not require sharpening as with other types. A heater unit is installed in the top body of the machine. The top light is a wall glass fitting is attached to the body of the machine and also an inspection light in the waste bin together with cement bottle and brush. A scraper blade is supplied and also a scraper blade setting jig and support shall rubber-covered. The whole machine is finished in first quality grey hammer and all metal parts other than cutter blades are hard flash chromed.

ACMADE MARK II EDITING TABLE

$2975 f.o.b. New York

Makes Editing Easy!

Operation of this simple, efficient editing machine can be mastered in minutes. Continuous movement provides absolute safety for your film. Instant controls and declutching allows up to 50% increase speed and efficiency in editing. Any combination of 2 or 3, 16mm or 35mm channels, plus magnetic and optical sound available.

WRITE FOR DETAILED BROCHURE

Serving the World's Finest Film Makers

FLORMAN & BABB

68 West 45th Street New York 36, N.Y.

MU 2-2928

Another Fine Product From ACMADE

AUTOMATIC BUTT SPLICER

Cuts, Splices, Applies Magic Mylar Automatically!

Raw, with no fuss, mess or waste, it is possible to splice, repair, butt-splice, or strengthen splices on all types of film—positive, negative, magnetic — even duPont Cronar or other bases.

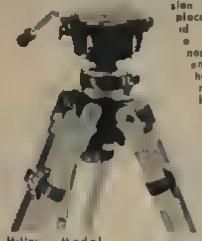
The cutting arm, shown in operating position is used by pressing the chrome button for cutting both sides of the film simultaneously. The film has been registered on pins in the horizontal channel. The cutting blade is easily replaced.

The splicing tape is registered on precision pins and held in place until automatically applied to the film by swinging the arm over and pressing the chrome button, cutting the adhesive and applying it — in perfect register to the film.

Model 35 for 35mm. Model 16 for 16mm—$285

SMOOOOOOOTH

That's the word for Miller Fluid Action Tripod Heads. It's because Miller Heads are true fluid Heads—the load rides on the fluid and all tension adjustments take place within the fluid chambers giving a velvety smoothness unmatched by any other tripod head — there is no stick, no bounce no back lash no judder Miller Fluid Action Tripods. Heads are available in two sizes — the Professional for cameras of 25 35 lbs The Model D for cameras of 12 14 lbs



Miller Model D Fluid Head with Ball Level ing Top Miller Grooved leg Tripod D Head $150 00 B/1 Tripod 139 50 Total $289 50

Miller Professional Model Fluid Head with Ball Level ing Top Miller Grooved leg Tripod Ball Leveling Pro Head $299 50 Tripod 154 50 Total $454 80

For the finest possible combination, get the new Miller Grooved Leg Tripod with Ball Leveling Top These are the easiest and fastest leveling legs available coupled with the finest and most rigid tripods in the Junior class

At your dealer or order directly from

MILLER PROFESSIONAL EQUIPMENT

1619 No Cherokee Hollywood 28, Calif

Phone HO 7-8189

26 YEARS OF QUALITY

REVERSAL PROCESSING

- Specialists in high speed or standard reversal processing
- Security clearance
- Free Vacuumating
- Films returned same day
- Customer extra service: Special prices on Eastman & du Pont Reversal Film

NATIONAL CINE LABORATORIES

WASHINGTON 17, D. C.

If this edited version is approved, actual cutting of the film can then be done In emergencies, the negative can be electronically "cut" in this manner and the resulting edited version be put on the air immediately simply by electronically reversing the image to positive in the video system

The key to the Teleduo system of electronic cutting is this: as the editor views his films and selects the cuts he desires, operating the pushbutton that directs the images to the third monitor screen simultaneously causes a cueing signal to be recorded on the magnetic sound tape These signals are in two rows on the sound tape—one for each film As the tape moves through the Teleduo in concert with playback of the two films, the previously recorded cues automatically trigger the scene selector that directs the cued image or scene to the third monitor. Length of the cut is determined by this automatic cueing device; in the editing procedure, depressing the scene selector button also cuts off the scene "on stage" on the third monitor screen and cuts in the one that is to succeed it

Any changes or revisions can be made instantly. For the final cutting step, the Teleduo provides an automatic stop at each cue signal, so that marking film and tape for actual cutting can be done quickly.

Obviously, this method is best suited to editing shows and events photographed with two cameras shooting at different set-up positions to provide a variety of camera angles and therefore variety in the cuts •

STORYBOARDS

Continued from Page 726

teenagers pound through what is probably the most frantic dance routine ever seen on the screen To photograph this mass frenzy the camera swoops and zooms over a wide area Takes, many three minutes in length and involving numerous camera moves, are interspersed with staccato cuts only 23 frames in length At the end of the sequence a zoom lens racks the scene back suddenly to show the understandably exhausted participants passed out on the ground The camera, mounted on a boom, continues to dolly back another 200 feet then soars upward 35 feet for the fade-out.

For the production of sequences such as those just described, the storyboard was invaluable. Employing only a skeleton crew of dancers in rehearsal, Sidney and Biroc were able to plot every camera movement in advance and then run through the action to check the mechanics of it The storyboard photographs often indicated that the choreographic pattern had to be altered to take full advantage of the backgrounds Of equal importance was the fact that the stills gave a graphic preview of the lighting problems, especially on the exteriors when the sun could be expected to shift its position as shooting progressed

One of the important applications of the storyboard was made for a trick sequence in which Dick Van Dyke sings a song called "Happy Face" to a decidedly unhappy Janet Leigh. In an attempt to cheer her up he first draws imaginary figures in the air (aided by animation) and when they crumble he pulls out of her figure another, happier Janet Leigh Then he and the two Miss Leighs proceed to do a dance number together This number was first photographed in stills with the two principals dancing Referring to the storyboard, Biroc shot the sequence using locked-down camera set-ups Various reference points had been marked on the floor, using small metal pegs The set was then draped with black cloth and the "happy" Janet Leigh went into her dance for the still camera. Checking the two storyboards, one against the other, prior to shooting the blacked out version of the dance, Sidney was able to determine if the action patterns were coinciding properly.

Besides taking the guesswork out of how things are going to look on film before they are shot, George Sidney's photographic storyboard technique permits complete freedom in shooting complicated musical numbers out of continuity, resulting in a tremendous saving in time and budget Actors, singers, dancers and technicians can pick up at any point in a number and, simply by referring to the storyboard, match action perfectly because they can see exactly what they are supposed to be doing at that point. Various cuts of the music playback are cued-in accordingly by number

Another advantage is that individual scenes can be grouped for greater economy in shooting All scenes to be photographed from the same direction can be filmed in a block. Then the

camera can be reversed while 'wild' walls are torn out and others put in place for the next block of scenes.

Sidney points out that a similar use of sequenced photographs was made by the French impressionist painter Edgar Degas, famous for his studies of the human figure and animals in movement. Critics have commented on the fact that he used "displaced figure grouping and unorthodox cutting and perspective rather in the manner of a cameraman." What is not generally known is that Degas was, indeed, a cameraman and that he made thousands of photographs of ballerinas rehearsing and horses running at Longchamps racecourse which he used for reference in his paintings.

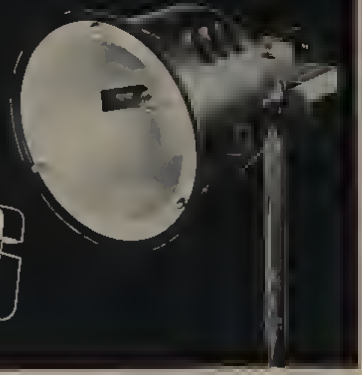
Commenting on his new photographic storyboard technique, Sidney observes "Besides being dramatically creative artisans, screen directors must also be technicians—and we sometimes let the technical aspects of film-making run away with us. The main value of the photographic storyboard is that it locks down all of the mechanical elements in advance and leaves the director free to concentrate on the purely creative dramatic aspects of the scene during actual shooting. A storyboard is, in a sense, 'paper film.' Going from one shot to the other you can get a feel for the visual balance of a sequence—actually see in advance where it might drop and where it lifts again. Then, too, it's a good way to make sure that everybody on your team knows what you're trying to do."

While the photographic storyboard is especially applicable to the pre-production planning of musical numbers, Sidney also feels that it can be of great value in staging complicated action sequences that include extensive movement or the rigging of intricate mechanical elements. He intends to make effective use of it in his forthcoming production, "Moon Walk," which includes a highly complicated chase sequence involving fifteen pages of script. ■

Change Of Address: To insure receiving American Cinematographer promptly each month after you move, send your new address in advance to Circulation Department, American Cinematographer, Box 2230, Hollywood 28, Calif. Send old address with new, enclosing if possible the address label from last magazine wrapper. Post offices will not forward this magazine unless you provide extra postage.

MORE THAN 5500 WATTS
of studio light
from a 1000-watt
quartz-iodine lamp!

WITH THE
ColorTran
QUARTZ-KING
1000



Newest light in the recently announced Quartz-King line, the 1000 produces more than **860 foot-candles of smooth even light** at 10 feet! Utilizing the Sylvania "DXN" 1000-watt 3400°K quartz-iodine lamp, in a reflector of a brilliant new design, the Quartz-King 1000 produces a **round** pattern of light, perfectly smooth, without hot spots, without banding, and without filament pattern. Never before has so much usable light been available in a housing as compact and as light as the 1000!

The Quartz-King 1000 operates directly from standard 110/120 volt outlets. Intensity is maintained because the quartz-lamp will not discolor or dim during its entire life, and the reflector will never tarnish.

The Quartz-King 1000 is available in two basic models, Universal Yoke and Integral Mogul Screw Base, with either medium or wide flood reflectors.

WITH UNIVERSAL YOKE
LQK/10MY Medium Flood
LQK/10WY Wide Flood

Specially designed yoke permits mounting on 5/8" dia. light stands, horizontal or vertical bars. 1/4-20 thread for tripod mounting. 240° vertical tilt. Adjustable for horizontal or vertical lamp orientation. Supplied with 10 ft. 3-wire heavy duty safety grounded cable with in-the-line switch and 3-to-2 prong adapter.

WITH INTEGRAL MOGUL SCREW BASE
LQK/10MM Medium Flood
LQK/10WM Wide Flood

Allows use of QUARTZ-KING in any lamp or housing designed for mogul base lamps. Supplied with adapter for medium screw base sockets.

WRITE FOR ILLUSTRATED LITERATURE
ColorTran INDUSTRIES
630 S. FLOWER STREET
BURBANK, CALIF. • VICTORIA 9-5991

QUALITY AND SERVICE
16MM
BLACK & WHITE
REVERSAL NEGATIVE
POSITIVE PRINTING
AND PROCESSING
COLOR Processing-
COLOR PRINTING
Work prints—Timed Prints
Color to Color prints—A & B roll prints
Color to B & W prints—Fades Dissolves
Dupe Negative—Multiple prints
Raw stock—Fastex service
Loop printing
Write for complete information
VIDEO FILM LABORATORIES
350 W 50th ST. • NEW YORK 19, N Y.
JUdson 6-7196

LINWOOD DUNN, ASC
Formerly head of RKO Studios Effects Dept.
CREATIVE
SPECIAL EFFECTS
Complete Advisory and Technical Services
From Story Ideas to Theater Screen
LIQUID GATE PRINTING
FOR 16-35-65-70 MM BLOW-UPS
Specialized Laboratory Services
"Over 30 Years of
Major Studio Experience"
FILM EFFECTS of Hollywood
1153 N. Highland Ave., Hollywood 38, Calif
Phone: HO 9-5808 Cable: FILMFX

U. C. M.
for
MOTION PICTURE PRINTERS
at
UHLER CINE MACHINE CO.
15762 Wyoming Avenue, Detroit 38, Mich
Phone: UNiversity 1-4663 • Cable: UHLCIMA

INDUSTRY NEWS

Continued from Page 708

tape recorders and related equipment. Award is a gold-replica statuette—a whimsical figure dubbed "Maggie." To qualify for one of the trophies, you must be an owner-user of Magnasync equipment or an operator of such equipment in the employ of a film producer. All "Maggie" awardees will subsequently receive periodic mailings from Magnasync of its service bulletins describing equipment modifications and latest innovations

Academy Considers 16 For Technical Awards

Sixteen technical achievements of the past year have been selected for 35th Annual Academy Awards consideration Gordon E. Sawyer, Chairman of the Academy Scientific or Technical Awards Committee, has announced that meetings to evaluate these technical advances have been held and demonstrations of the achievements have been scheduled for November 29th and December 4th. A final meeting will be held in December to determine which of the achievements the committee will recommend to the Board

Addresses Of Equipment Rental Sources

Listed on Pages 734 and 735 of This Issue

EAST

Camera Equipment Co., Inc.,
315 W 43rd St., New York 36, N Y
51 E 10th Avenue Hialeah Fla

The Camera Mart, Inc.,
1845 Broadway New York 23 N Y

Camera Service Center, Inc.,
333 West 52nd St., New York, N Y

Fleeman & Sohn, Inc.,
68 West 45th St New York 36 N Y

National Cine Equipment, Inc.,
209 W 48th St New York 36 N Y

Charles Ross, Inc.,
333 W 52nd St., New York 19 N Y

SOS Photo-Cine-Optics, Inc.,
602 W 52nd St New York 19 N Y

MID-WEST

Behrend's Rental Corp.,
161 E Grand Ave Chicago 1, Ill

Burke & James, Inc.,
321 S Wabash Ave., Chicago 4 Ill

Studio Lighting Company,
2212 N Halsted St Chicago 14, Ill

Jack A. Frost,
234 Piquette Detroit 2, Mich

Victor Duncan & Co.,
234 Piquette Detroit 2, Mich

Western Cine Service, Inc.,
321 So. Pearl St., Denver 9, Colo

Mosterlite Rentals of Arizona,
834 N Seventh St., Phoenix Ariz

Capitol Motion Picture Studios,
328 North 11th Way Phoenix 6 Ariz

Producer Services, Inc.,
2519 Maple Avenue Dallas Tex

WEST COAST & HAWAII

Mark Armistead, Inc.,
1041 N Formosa Hollywood 46 Calif

Birns & Sawyer Cine Equip., Co.,
6424 Santa Monica Blvd., Holiyd 38 Calif

Camera Equipment Co., Inc.,
6510 Santa Monica Blvd Hollyd 38 Calif

Consolidated Film Industries,
959 Seward St., Hollywood 38 Calif

Hollywood Camera Co.,
6838 Sunset Blvd Hollywood 28, Calif

Hollywood Camera Exchange, Ltd.,
1607 Cosmo St., Hollywood 28 Calif

Hollywood Film Company,
956 Seward St., Hollywood 38 Calif

Lloyd's Camera Exchange
1612 No. Cahuenga Hollywood 28, Calif.

J. G. McAlister, Inc.,
5420 Sierra Vista, Hollywood 38 Calif.

Hollywood Scene Dock,
5428 Satsuma No Hollywood, Calif

Byder Sound Services, Inc.,
1161 Vine St Hollywood 38, Calif

Mosterlite Cine Rentals, Inc.,
7277 Santa Monica Blvd Hollyd Calif

Mole-Richardson Company,
937 No Sycamore Ave Hollywood 38, Calif

Producers Equipment Center, Inc.,
5428 Satsuma No Hollywood, Calif

Producers Service Company,
1145 No McCadden Pl., Hollyd 38 Calif

Tech-Camera Rentals, Inc.,
6450 Santa Monica Blvd Hollyd 38 Calif

SOS Photo-Cine-Optics, Inc.,
6331 Hollywood Blvd Hollywood 28, Cal f

Chapman Studio Equipment Co.,
12950 Raymer St., No Hollywood, Calif

Gordon Enterprises,
5362 No Cahuenga Blvd., No Hollyd Calif

Film Producers Service,
687 McAlister St San Francisco Calif

Trans Corporation,
17136 Ventura Blvd., Encino, Calif

Motion Picture Service Center,
2424 Kalakaua, Honolulu, Hawaii

FOREIGN

Toronto Camera Exchange, Ltd.,
293 Church St., Toronto 2 Ont., Canada

Jack A. Frost,
6 Showbridge Toronto, Canada

Mole-Richardson,
Chase Road London, N W 10 England

Samuelson Film Service, Ltd.,
27 The Burroughs, Hendon Central, London N W 10, England

Dan Long,
33 Baker St W 1., London, England

Motion Picture Hire Facilities, Ltd.,
53 Kensington Gardens Sq. London W2

Dudley Plummer,
Phone Potters Bar 56858, London, England

Mole-Richardson,
28 28 bis Rue Marcelin Berthelot Paris

Cheveresu,
20 Rue de la Chine, Paris 20

Mole-Richardson,
Via del Velodromo 68 74, Rome

Mole-Richardson,
Hofangerstrabe 78, 8 Munchen, Germany

Mole-Richardson,
Alcala 32, Madrid 14, Spain

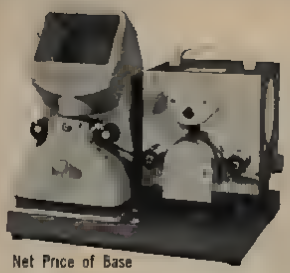
William Moreski,
Film Center Bldg San Juan, Puerto Rico

PRECISION® FILM EDITING & LABORATORY EQUIPMENT

MOVISCOP 16mm Viewer with Model 600 RL Optical sound reader and base Model 800 RL optical magnetic sound reader can also be used with this system

Net Price

Model 600 RL
$195.00



Net Price of Base
$39.50

Both viewers are interlocked for perfect lip sync matching of picture to track

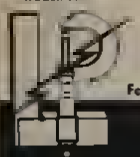
16mm OPTICAL SOUND READER MODEL 650RL

Net Price
$169.50

Net Price of Base
$21.50

Power film slitter
16mm to double 8mm

Look for the trademark



film slitter

For information and prices write

Designers and Manufacturers of Equipment for the Motion Picture and TV Industries

PRECISION LABORATORIES
DIVISION OF PRECISION CINE EQUIPMENT CORPORATION
928-930 EAST 51st STREET BROOKLYN 3, N. Y.

of Governors for awards recognition.

Pursuant to committee policy, the following list is being publicized to permit those with claims of prior art or with devices similar to those under consideration to call them to the Academy's attention.

Instant Sync, Myer P. Beck; Panazoom Lens, Panavision, Incorporated; Chapman Camera Cranes, Chapman Studio Equipment; Core-Lite Projection Arc Lamp, C. S. Ashcraft Manufacturing Co., Inc.; Bell & Howell Model C Additive Color Printer, Bell & Howell Company, Norelco Universal 70/35 Projector, North American Philips Company, Inc.; Ryder Inverter, Ryder and Albin; Panavision Panatron, Panavision, Incorporated; Cardilene Microphones — Models 642 and 643, Electro-Voice Incorporated; RCA MI-10006A Varidirectional Microphone, Radio Corporation of America; Reversible Rerecording System, Warner Bros.; Panaflex 65, Panavision, Incorporated, Mitchell Reflex Mark II Camera, Mitchell Camera Corporation; Selective Program Repeater, MacKenzie Electronics, Inc., Preparation of Magnetic Oxide Coatings, Warner Bros., and Plug-In Bus Duct, Paramount Pictures and Westinghouse Corporation. ■

SOUND!

CRISP CLEAR AND LIGHT

(IN WEIGHT)

16mm MAGNASYNC RECORDER

Model X 400 Type 15 is especially designed for servicing "On-the-Go" producers who prefer everything in one case—playback power amplifier, monitor loudspeaker, recorder, footage counter, rewind, torque motors—an ALL IN-ONE magnaphonic sound system (S.M.P.T.E. standard performance) completely in a single easy-to-carry case. Will accommodate standard 1200 foot film reels.
Write for illustrated brochure

PRICED ONLY $1385

Model X 400 for extra lightweight portability, from $985

S.O.S. carries the complete line of Magnasync recording systems

S.O.S. PHOTO-CINE-OPTICS, Inc. 602 West 52nd St., New York 19—Plaza 7-0440
Western Branch 6331 Hollywood Blvd., Holly'd, Calif.

SEE OFFERING OF EXTRA-SPECIAL VALUES ON PAGES 716 718 720 AND 723

FROM YOUR 12 VOLT CAR BATTERY

Rubylite CLAMP-ON

DELIVERS 250 WATTS of smooth, even 3400°K light—

$49.50

Rubylite

PORTABLE MOVIE LIGHT

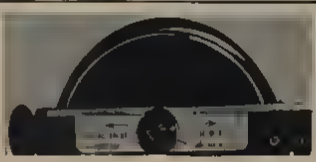
Fits any camera No tools needed no holes to drill Long life nickel-cadmium battery with built-in charger weighs only 7 lbs Guaranteed one year

$199.50

COMPLETE WITH BATTERY

PHOTOMART

Telephone 229-1168



DUAL POWER VIEWER for BOLEX REFLEX From an original 6X to an 8X full field and 16X critical focus LARGER IMAGES—BETTER SHARPNESS CONTROL WITH ANY LENS Easy to Operate—Guaranteed for Life—More Information Available—When Viewer only is sent $54.00—When sent with Camera $60.00

PELLEGRINI-PIEK

MOVIE CAMERA ACCESSORIES

7 COLEMAN PLACE, MENLO PARK, CALIF

Makers of Variable Shutter Units for all Bolex H Cameras.

L & F PORTABLE CINE PROCESSOR

● Fully Automatic ● Daylight Operating

$675.00 (f.o.b. Chicago)

- 16mm or 8/8mm
- Requires no plumbing
- Process 200 Ft R&W Film In Less Than 1 Hour
- Reversal Processing
- Less Than 1 Gallon of Solution Needed
- 32"x9"x24"H 55 lbs!

Write For Descriptive Literature

SUPERIOR BULK FILM CO.

446-48 N Wells ● Chicago 10, Illinois

NEW IMPROVED PROCESS

LAMINATED SOUND STRIPING

THE Vitatone CO. 8MM—16MM 2½¢ per ft

380 Ft. Minimum Order — Quality Guaranteed

Send for Free Brochure

7001½ SO. ATLANTIC BLVD., LOS ANGELES 22, CAL.

FLASHBACK TO YESTERYEAR

1930—Joseph Walker, ASC, is behind the big, blimped camera on a Columbia Studio sound stage, shooting a scene for "Dirigible," which had its world premiere at Grauman's Chinese Theatre in Hollywood.

Director Frank Capra is standing on the "homemade" camera dolly—a wooden platform supported by four wheels from a Model T Ford. Actor Jack Holt (extreme left) is dancing with Fay Wray. Ralph Graves is just to the right of Capra. Sam Nelson, assistant director (in shirt sleeves) is in front and at right of camera.

The camera blimp is an interesting item. "When sound productions started at Columbia," Walker relates, "the sound department insisted on a metal blimp having one and sometimes two panels of glass in front of the lens. I refused to shoot through glass and besides the metal blimps were far from sound proof. Harry Cohn, then head of the studio, placed a carpenter at my disposal and overnight we built the blimp shown in the picture.

"It was deeply padded on the inside and the camera rested on a metal plate embedded in sponge rubber. The matte box was not attached to the camera but was part of the blimp and was adjustable to accommodate lenses of different focal length.

"This construction worked so well that at no time at Columbia did I ever shoot through a glass port except once when we had to photograph and record the sound of a baby breathing while asleep.

"I ultimately developed a follow-focus device geared to the lenses. The controls extended from the side of the blimp—later improved with extensions at both sides and at the rear of the blimp.

"I still have this follow-focus device, because I paid for having it built."

"Later, Teddy Tetzlaff, ASC, improved on the blimp by having the back cut at an angle, enabling the cameraman to get his eye closer to the finder."

BEHIND THE CAMERAS

Continued from Page 718

PARAMOUNT STUDIOS

W WALLACE KELLY, ASC, "The Nutty Professor" (Jerry Lewis Prod., color) with Jerry Lewis and Stella Stevens Jerry Lewis, director.

BODIS KAUFMAN, ASC, "All the Way Home" (David Susskind Prod., shooting in Tennessee) with Jean Simmons and Robert Preston Alex Segal, director.

WILLIAM DANIELS, ASC, "Come Blow Your Horn" (E-T Prod; P'Vision & Color) with Frank Sinatra and Tony Bill. Bud Yorkin, director.

HASKELL BOGGS, ASC, WILLIAM WHITLEY, ASC, "Bonanza"*

PARAMOUNT STUDIOS—N.Y.

JACK HORTON, "Sport Shorts"*.

PARAMOUNT SUNSET STUDIOS

FLEET SOUTHCOTT, "Gunsmoke"*

PATHE STUDIOS—N.Y.

GAYNE RESCHER, ASC, "The Nurses"*.

PRODUCERS STUDIO, INC.

EMMET BERCHOLZ, "Death Valley Days"*.

REPUBLIC STUDIOS

HOWARD SCHWARTZ, "The Llayd Bridges Show"*.

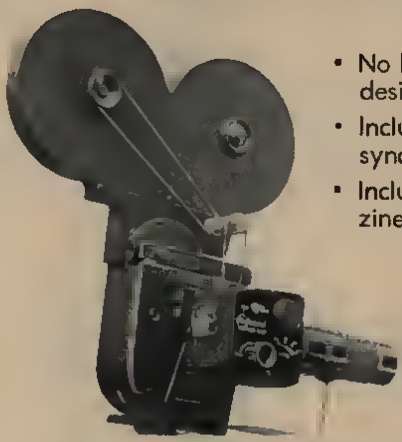
GEORGE DISKANT, ASC, "Dick Powell Show"*.

CHARLES BURKE, "McKeever and the Colonel"*

Continued on Next Page

NEW! BOLEX 400 ft. CONVERSION NEW!

CONVERT YOUR BOLEX TO A 400-FT. CAPACITY CAMERA FOR SPORTS OR NEWS



- No loss of original Bolex design.
- Includes choice of wild or sync motor.
- Includes 400-ft. Magazine (Mitchell-type).

All For

$349.50

Installation $29.50 additional if desired

Write for Data Sheet

LLOYD'S CAMERA EXCHANGE

1612 North Cahuenga Boulevard • Hollywood 28, California

HOLLYWOOD'S 16MM EQUIPMENT HEADQUARTERS

MAJOR BREAKTHROUGH IN SPRAY DEVELOPING

- DEVELOPS NEGATIVE FILM AT 35 FPM
- DEVELOPS POSITIVE FILM AT 60 FPM

The S-60 is Filmline's newest Spray Processor. It is a friction drive processor, *guaranteed* not to break or scratch film. Filmline's exclusive overdrive film transport system is so accurate it makes this guarantee possible. What's more film can be stalled 100% in spray chambers without altering footage. Absolute control of footage in each chamber insures sensitometric quality control and consistent development. And Filmline processors (unlike competitive makes) have lower film assemblies that are adjustable and remain captive in the position placed. Position of lower assemblies can be easily monitored and adjusted by indicator rods at the top of each chamber.

The S-60 is the specific answer to every laboratories need for a Spray Processor — because it outperforms machines costing twice as much. *Look into the Filmline S-60 — It Will Pay You.*

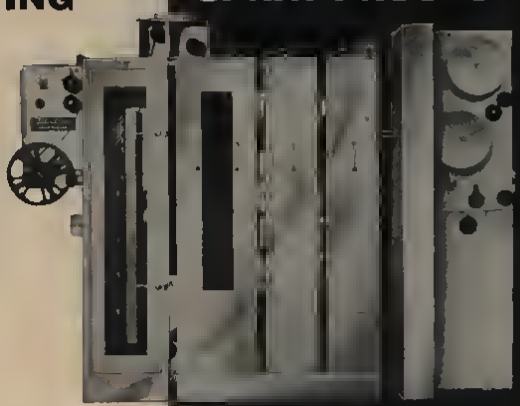
For the full story on the S-60 write today to:

Filmline CORPORATION
MILFORD, CONNECTICUT

Recent Filmline Installations:
- N A S A Huntsville, Ala
- Reeves Sound N Y C.
- Thiokol Chemical Co
- WHYN-TV, KNDO TV, WFMY-TV
- Moral Rearmament

Dept. AD-62

new! FILMLINE S-60 16/35MM NEG/POS SPRAY PROCESSOR



More Filmline Features

• Film chamber doors are completely removable for easy access to entire chamber (Not found in competitive models of similar class) • Processing section is stainless steel • Impingement dry box • Precision temperature controls with indicating pilot lights for cooling & heating • 316 Stainless steel pumps for developing & hypo solutions • Water temperature regulator • Dual air squeegee • Feed in take up elevators for continuous operation • Replenishment flow meters • Manual & automatic brake for film supply • Automatic electrical torque motor take-up • Variable drive with 10in speed tachometer • Precision Thermometer & footage counter.

This is the latest IMPROVED

CINEKAD JUNIOR DOLLY

Used Nationally by Discriminating Cameramen

This 3-Wheel Collapsible Dolly is especially designed to meet the demand for convenient mobility of cameras on location or in the studio

The new model instead of the 4" wheels is constructed with 5" heavy duty rubber-tired swivel wheels.

Write for more details and prices

CINEKAD ENGINEERING CO.
763 10th Ave., N.Y., N.Y., Plaza 7-3511

Deck is equipped with ample load capacity, securely fastened but readily removable

CARTER CARPAC

For The Commercial Photographer

A Necessity when you need an elevated platform. Over 22 sq. ft. non slip deck area. The **safe, easy, sure** way to get the elevation you need for better pictures.

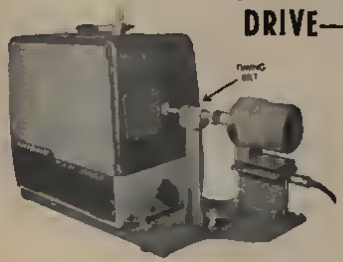
CarPac Platforms on three mobile units prove a big help to Lens-Art Photographers, Detroit, who say: "We have used your CarPac carriers a good many years and can truthfully state that they are a handsome workhorse of a fine cameraman's deck. Our specialty is architectural and illustrative photography and we use them almost every day." Write for folder. Models from $165 $225 plus tax. Advise year & model of car.

CARTER MANUFACTURING CO.
1227 S.E. Division — Portland, Oregon

FOR THE ANSWER to your photographic problems, refer with confidence to the new
AMERICAN CINEMATOGRAPHER MANUAL
More than 400 pages of concise, practical and informative data and charts invaluable to every motion picture cameraman $7.50
AMERICAN CINEMATOGRAPHER MANUAL, P.O. Box 2230, Hollywood 28, California

Used World-Wide By Discriminating Cameramen

CINEKAD SYNCHRONOUS MOTOR DRIVE—For 16mm Projectors



Especially designed to drive all Bell & Howell, Jan, Ampro, Kodak, RCA, and Victor 16mm projectors at synchronous speed.

Projector can be instantly attached to Synchronous Motor Drive and quickly detached at any time in a matter of seconds. An outstanding feature is the flexible shaft which connects motor with projector and permits smooth, quiet and steady operation. No special technical knowledge required for installation and mounting. Write for more details and prices.

One-year Guaranteed Immediate Delivery!

CINEKAD ENGINEERING COMPANY, 763 10th Ave., N.Y., N.Y., Plaza 7-3511

BEHIND THE CAMERAS

Continued from Preceding Page

REPUBLIC STUDIOS, Cont'd

WILFRID CLINE, ASC, "Saints and Sinners"*.

REVUE STUDIOS

CHARLES LANG, ASC, "Charade" (Stanley Donen Prod., Technicolor; shooting in Paris) with Cary Grant and Audrey Hepburn. Stanley Donen producer-director.

JOHN RUSSELL, ASC, WILLIAM MARGULIES, ASC, JOHN WARREN, ASC, "Alfred Hitchcock Presents"*.

RAY FLIN, NEAL BECKNER, "It's a Man's World"*.

JOHN RUSSELL, ASC, NEAL BECKNER, "The Best Years"*.

FRED MANDL, ASC, "Going My Way"*.

JOHN WARREN, ASC, BEN KLINE, ASC, "Alcoa Theatre"*.

RAY RENNAHAN, ASC, "Laramie"*.

NEAL BECKNER, "McHale's Navy"*.

BENJAMIN KLINE, ASC, "The Virginian"*.

JACK MACKENZIE, ASC, "Leave It to Beaver"*.

NICK MUSURACA, ASC, "Jack Benny Show"*.

WALTER STRENGE, ASC, "Wide Country"*.

ELLIS THACKERY, ASC, "Wagon Train"*.

HARRY WAXMAN, "Lancelot and Guinevere" (Emblem Films Prod.; PVision & Color; shooting in Yugoslavia) with Cornel Wilde and Jean Wallace. Cornel Wilde, director.

TWENTIETH CENTURY-FOX

JACK NICHOLAUS, "House of the Damned" (API Prod.) with Ronald Foster and Merry Anders. Maury Dexter, producer-director.

WARNER BROS.

ROBERT SURTEES, ASC, "PT 109" (PVision, color, shooting in Florida) with Cliff Robertson and Ty Hardin. Lewis Milestone, director.

HASKELL WEXLER, "America, America" (Athena Ents. Corp. Prod., shooting in Athens) with Stathis Giallelis, Elia Kazan, producer-director.

HAROLD LIPSTEIN, ASC, "Rampage" (Seven Arts Prod., Technicolor) with Robert Mitchum and Elsa Martinelli. Phil Karlson, director.

HAROLD STINE, ASC, CARL GUTHRIE, ASC, "77 Sunset Strip"*.

RALPH WOOLSEY, ASC, CARL GUTHRIE, ASC, "Cheyenne"*.

ROBERT HOFFMAN, "Hawaiian Eye"*.

BURT GLENNON, "The Dakotas"*.

CARL GUTHRIE, ASC, "True"*.

JACK MARQUETTE, "Gallant Men"*.

MARK DAVIS, ASC, "PT 109" Second Unit.

ZIV-UNITED ARTISTS

MONROE ASKINS, CURT FETTERS, "Ripcord"*.

"Around The World In Eighty Days," photographed in Todd A-O widescreen, ran for three years on Broadway at the Rivoli theatre. One print made the record run through the Norelco 70/35mm projectors 786 times.

BUY, SELL, SWAP HERE!

Largest, Most Productive Classified Ad Section Of Any Publication Serving Makers Of Motion Pictures

STUDIO & PRODUCTION EQUIP.

MAURER 05 with 15mm Ektar, 25mm Ektar 40mm Ektar 63mm Ektar, 115 volt A.C sync motar. 12-volt D C motor, 2 400 ft magazines Richardson fol law focus, Richardson blimp, cases Complete $4000.00

MAURER 05 with 13mm Elgeet, 15mm Ektar, 25mm Ektar 40mm Ektar, 63mm Ektar 2 400 ft magazines, 115-volt A.C sync motor, 12-vall D C motor, accessories Complete $2500 00

MAURER 05 with 13mm Elgeet, 15mm Ektar, 25mm Ektar, 40mm Ektar, 63mm Ektor, 3 400 ft magazines & case, 115 volt A.C sync motor, 12-volt D C motor accessories Complete $2550 00

MAURER STOP MOTION MOTOR $200 00

MAURER 115 volt variable speed motor, $200 00

2 ARRIFLEX 16mm Cameras, each with 13mm, 16mm 25mm, 50mm Schneider lenses case matte box, 3 400 ft magazines case etc. Complete each outfit $1500 00

MOVIOLA PREVIEW MODEL 16mm picture head 2 35mm optical and magnetic sound heads $1000 00

ANIMATION CRANE equipped with 16mm Maurer camera rotating on optical axis pneumatic platen air com pressor Acme peg system Complete $6000 00 or best offer, priced to sell

All of the above equipment in excellent condition

R G WOLFF STUDIOS
1714 North Wilton Place, Hollywood 28 Calif.
Phone HO 7-6126

WALL 35mm camera movements, $250 00; B&H 35mm 400' magazines, $35.00, B&H 35mm 1000' magazines, $95 00, Mitchell 35mm 400' magazines as NEW, $60 00; Mitchell 1000' Standard magazine, $95 00, Kinevox Automatic Slater, $450 00, Fastex Hi-Speed 35mm half frame camera, $750 00, B&H Super Hi Speed motor for 200 frames sec $375 00 RCA 400 16mm Arc projector, sound & rectifier $750 00 16mm Strong Su prex 30 amp Hi Intensity arcs with rectifiers and interconnecting cables, BRAND NEW, $295 00, 35mm Background projector, blimped on dolly, B&H movement, Selsyn distributor, interlock camera motor, 225 amp HI-Intensity arc complete $7,950 00; Bodde 15'x20' background screen $300 00 J. BURGI CONTNER, ASC Blue Seal Sound Devices P O Box 472 New Canaan Conn

---

FOR SALE Professional portable mag recorders two 16mm Magno-Tech plus ch mixers per $2,200 00 One 35mm Reeves, plus 2 ch mixer, $2,000 00. One 16mm Reeves plus 2 ch mixer, $400 00 One 16mm Magna-Synch plus 4 ch mixer $300 00 One 16mm Reeves rack mounted plus 2 ch mixer, $500 00 Two 35mm Altec 3 track dubber in racks per $300 00 All in excellent condition LARRY MEZEY 210 West 65 St, New York Tel TR 3 7000

35MM ROTOSCOPE stop-motion projector with Acme lamphouse, $650 00 Phone HO 9-5808

Auricon tripod head $125 00 B&H Eyema 35mm, type A 3 spider turret—less lenses, $120 00 Printer, 16mm, Hollywood Jr., $47 50 Lenses 35mm 10" T4 9 General Scientific, $79 50 4" F2 3 Baltar Eyema maunt, $70 00 4" F2 3 Baltar, Mitchell maunt $85 00 FOB Tampa JACK WALTON P O Box 1457, Tampa, Fla

---

12V variable speed CECO Cine Special motar w/tach, excellent, $60 00 Two 400' 35mm Mitchell magazines one new, one very good, both $50 00 One 35mm Griswold splicer, $5 00 Mole-Richardson SolarSpot w/stand, excellent $65 00 Want 3 or 4 gang 16mm synchranizer. MISSILE FILMS, Box 65, Cocoa Beach, Fla

---

CAMERA motors, Eyemo (will also fit Filma) Bodine 4-6 volt DC with cable & switch New condition, $38 50 ea, postpaid View finder, BH Sports or Tracking finder, fits Eye ma Q and other models (Can also be used an Filma) Complete with door, new condition $55 50 ea postpaid Cash with order please JACK WALTON P O Box 1457, Tampa, Fla

---

MITCHELL 35mm std (H S) camera, with two 1,000' magazines Mitchell viewfinder with floating mattes matte box and sunshade as sembly upright 12v DC motor, cables Akeley gyra tripod—less lenses, $2850.00 FOB Tam pa JACK WALTON, P O Box 1457, Tampa Fla

---

CINE SPECIAL 11 with 15mm, 25mm, 152mm Ektar lenses, elec. mtr, extra 100' B 200' chambers, reflex finder, filters, holders, carry case All like new, $1,500 00 (45% of cost) FRAN McGINNIS WORDS & PICTURES, 3802 Crestlake, Birmingham, Mich.

AURICON Super, 1200 camera with vanable shutter, two 1200' magazines, auto-parallax viewfinder, recording galvanometer, NR ampli fier, microphone, headset, cables, carrying cases—less lenses, $3250 00 FOB Tampa JACK WALTON P O Box 1457, Tampa Fla

---

MAGNACORD ¼" studio tape recorder and tape transport, models PT6 AH and PT 6-J In storage for same time, appears very good Sell as is, $175 00 FOB Tampa JACK WALTON P O Box 1457, Tampa, Fla

---

CINE SPECIAL, 4 lens, lap dissolve, carrying case, tripod, miscellaneous filters and attach ments Privately owned, $850 00 P O Box 333, Van Nuys, Calif

---

AMPEX 351 with RANGERTONE SYNC PULSE in like new condition Make offer PAUL MAGISTRETTI, 298 Skyline Dr., Daly City, Calif PL 5-1543.

TRADES TAKEN
S.O S PHOTO-CINE OPTICS, INC.
Phone PL 7-0440 Cable: SeSOUND
602 W. 52nd Street, New York 19
Western Branch—6331 Hollywood Blvd
Hollywood, Californio

CAMERA MART 16mm dual sound reader and Craig viewer, $125 00 M V ORESKOVIC, 1525 Abbott Rd, Lackawonna 18, N Y

EQUIPMENT WANTED

INSTANT CASH
HIGHEST PRICES PAID
for your used 16mm and 35mm professional equipment of any kind
UBGENTLY NEED
ABBIS, AURICONS, MITCHELLS,
Zoom lenses, lab, editing lighting & recording equipment for our Rental Program
CONSIGNMENTS WELCOME
NEW—USED
BENT BUY TRADE, BEPAIR
HOLLYWOOD CAMERA COMPANY
6B3B SUNSET BLVD, HOLLYWOOD 2B CALIF

FOR THIRTY SIX YEARS WE VE
TRADED AND SOLD
Equipment new and equipment old
To serve our customers is our desire
Let us help you find a buyer
CONSIGNMENTS TAKEN—SET YOUR PBICE
Ship it in—OUR PERCENTAGE IS SMALL
Wire us—Phone PL 7 0440
S O S PHOTO CINE OPTICS, Inc
Cable SOSOUND
Dept fc, 602 W 52nd Street, New Yark 19
Western Branch—6331 Hollywood Blvd
Hollywood, Calif, Phone 467 2124

TRY F&B LAST
FOR THE HIGHEST QUOTE ON
USED MOVIE EQUIPMENT
FLORMAN B BABB
6B W 45th ST N Y 36, N Y

WHY SACRIFICE
your production and struggle with old or used equipment when we can trade for cash or new equipment? Let us know what you have and what you need
THE CAMERA MART, INC
1B45 Broadway PL 7 6977 New York 23 N Y

GOOD, USED 16mm Mitchell Blimp 300 to 750 AMP generator (M R preferred), 16mm Arriflex with blimp, Mitchell 35mm NC or BNC. Needed immediately, cash waiting Box 145B AMERICAN CINEMATOGRAPHER

WANTED to buy all types of projection bulbs, spotlight bulbs ADVANCED SPOTLIGHT SERV ICE, Box 206 Passaic, N J.

LABORATORY & SOUND

SOUND RECORDING at a reasonable cost High Fidelity 16 or 35 Quality guaranteed Complete studio and laboratory services Color printing and lacquer coating ESCAR MOTION PICTURE SERVICE, INC, 7315 Carnegie Avenue, Cleveland 3 Ohio Phone ENdicott 1 2707

SERVICES AVAILABLE

FILM ASSIGNMENTS wanted, Pacific Coast and Midwest Area for stock shots, process plates, etc. Top Hollywood cinematographers and equipment available WORLD WIDE FILMS INC, 10B So LaJolla Ave, Hollywood 4B Calif Phones WE 9-830B and OL 3-5072

Continued on Next Page

RATES: Ads set in lightface type, 15c per word Minimum ad $2.00 Text set in lightface capital letters (except 1st word and advertiser's name) 20c per word Modified display forms) (text set in boldface type capitals or upper and lower case) $1.50 per line. Send copy with remittance to cover payment to Editorial Office, American Cinematographer, 1782 No Orange Drive Hollywood 28, Calif Forms close 1st of month preceding Date of Issue.

Classified Ads

Continued from Preceding Page

POSITIONS AVAILABLE

WE NEED HELP In producing some of the nation s finest television commercials and in dustrial films If you are a talented camera man and/or editor, send resume to KEITZ and HERNDON, INC., 3601 Oak Grove, Dallas Texas

SERVICES AVAILABLE

AFRICA

Full 16mm equipment, Arri, Magnosync, etc Experienced cameraman Complete safaris ar ranged for tourists ar professional units TRANS AFRICA GUIDES, Box 9538, Nairobi, Kenya

CANADIAN assignments wanted Complete 16mm facilities Experienced sound crew Box 1460 AMERICAN CINEMATOGRAPHER.

MOTION PICTURE CAMERAMAN NOW EM PLOYED photographing news and commercials seeks relocation, 10 years experience C ROLOFF 3260 Orange Street Boynton Beach Florida

BRAZILIAN English speaking production unit available for assignments in Brazil Uru guay etc 11 years experience, color B&W HELICONFILM, Ave Ipiranga 1248 Sao Paulo

ALASKA 16mm film assignments specializ ing in Wildlife and big game photography Stock of wildlife footage available RON HAYES, Box 1711, Anchorage, Alaska

JAPANESE English speaking director cinematog rapher for features, TV, etc HARRY MIMURA, 2 1303 Setagaya, Tokyo, Japan Credits Around the World in 80 Days (Far East locations), American TV films (See American Cinematographer, March, 1961)

EUROPEAN assignments 16mm top American equipment THOMAS d HOSTE, 31 Avenue MacMahan Paris 17, France In U S A 7617 Hollywood Boulevard, Hollywood, California In Canada 3261 Forest Hill, Montreal, P. Q.

TITLES & OPTICALS for low budget produc tions 8/16/35mm service Samples and price list from ASSOCIATED CINETITLE SERVICES, 13204 Shaver, Baldwin Park, California

16mm FILM assignments—Chicago, Zoographic, Scenic, Industrial ARLETTE STUDIO FILM PRO DUCTIONS, 1657 Grace St, Chicago 13, Illi nois BI 8-8612

FILM ASSIGNMENTS, New York, Boston area scenic, stock shots, industrial ACORN FILMS 168 W 46th St N Y C Judson 6-2272

CAMERAMAN available for assignments in cluding UNDERWATER ROY CHEVERTON, 2625 N Ocean Blvd Fort Lauderdale, Fla

CLASSIFIED ADVERTISERS

Effective with the January, 1963, issue, rates for classified advertising will be 20¢ per word, minimum ad $2.00. Ads set in modified display format or set in all capitals, $2.00 per line regardless of number of words Closing date for copy is 15th of month preceding date of issue Send ad copy plus remittance to cover payment to American Cinematographer, P O Box 2230, Hollywood 28, Calif

INDEX TO AMERICAN CINEMATOGRAPHER—1962

Volume 43, Nos. 1 to 12 incl.

INDEX BY TITLE OR SUBJECT

A

A Wind 8 Wind—What Do They Mean? Nov 666
Academy Award Nominees for 1961, Apr 225
Advise & Consent Photography of Aug 478
Air Force Filming Project Dec. 736
Alekan Gerard Process of Composite Photography, Jul 428
Animation, Automation In Mar 172
APCS Cameramen—Eyes of The Air Force, Nov 676
ASC's Research & Educational Committee, Jan 32 Mar 171 Apr 212 Nov 650
A S C Recommendation No 17 Mar 171
A S C Recommendation No 10 Nov 650
Automatic Exposure Control with Light Pilot, Feb 104
Automation In Animation Mar 172

B

Background Plates the Photography of, Feb 98
Birdman of Alcatraz, Photography of, Jun 354.
Books, Sept 548

C

Cameras At The Capital Aug 478
Chapman Camera Cranes Nov 674
Cinematography in The Atomic Age Feb 94
Cinematography In Legal Evidence, May 294
Cinemicroanalysis Dec 728
Cinerama Goes Dramatic, Jan 28
Circarama, Circling Italy With, Mar 162
Circling Italy with Circarama Mar 162
Color Films, New Eastman Jun 362

D

Dobie Gillis TV Show, Photography of Oct 600
Do It Yourself ' Lens and Camera Accuracy Test, Feb 102
Doubling In Brass, Sept. 540
Dual Camera Photography, Aug 484
Dubbing of Sound Mar 168
Dubbing Spanish Voices for TV Films Jun 360
Duplicating Kodachrome II, Oct 610

E

Effects The Scotchlite Process Apr 228 Se attle World s Fair Film Jul 416, Alekan-Gerard Process of Composite Photography, Jul 428, Traveling Matte Systems, Sept 538
8mm For TV News Reporting Dec 722
El Cid —The Photography of, Jan 30
Electronic Film Editing, Dec 730
Elodia, ' Photography of, Sept 540
Equipment Rental Directory, Dec 734
Experiment In Terror, Photography of May 288

F

Fighting Fire With Film, Oct 602
Film Music, Apr 236
Filming The Dobie Gillis Show, Oct 600
Filming The First Cinerama Feature, Sept 536
Fireball Reflector, Apr 232
First Person' Camera Technique, Mar 170
Flashback To Yesteryear: 1925 P Tannura, Sept 514 1914—Arthur Edeson, Oct 615; 1930—Joseph Walker, Dec 758
From Caligari ' to Caligari , Jul 420

G

G E Introduces New Portable Cinema Light Oct 608
Gas Pipe Dolly Mar 164

H

Hemingway s Adventures of a Young Man, The Photography Of, Oct 604
Hong Kong Filming Venture, Jan 40

I

Illusion of Reality, The, Apr 230
Is 16mm Color Negative The Answer? Sept 544

L

Light Pilot, Feb 104
Logistic of a Global Filming Project May 298

M

Magic Sword (The) ', Photography of, Mar 158.
Making A Marketable Movie Aug 477
Moon Pilot, The Photography of, Feb 90
Movie Magic For The Magic Sword,' Mar 158
Moving Camera Shots on Skis, Feb 92
Multicam Technique In College Film Produc tion, Jun 369
Multi screen Motion Pictures Apr 234
Music For Films, Apr 236

N

New Eastman Color Negative and Color Print Films, Jun 362
New Look In Film Titles Jun 356
New Look' In Reflectors Apr 232
Newman Sinclair Motor driven 35mm Camera Jan 38
New Ventures In Cinematography, Sept 546

O

Oh Yes—The Titles! Sept 547
Oscar Nominees for Best Cinematography Mar 167

P

Photographing a 16mm Lecture Film In Japan Oct 615
Photographing Elodia, Sept 540
Photographing Moon Pilot, Feb 90
Photographing The Films of Ingmar Bergman Oct 613
Photography of Advise and Consent, Aug 478
Photography of Background Plates, Feb 98
Photography of Birdman of Alcatraz Jun 354
Photography of El Cid In Technirama 70, Jan 30
Photography of Experiment in Terror, May 288
Photography of Hemingway s Adventures of a Young Man Oct 604
Photography of Ride The High Country, Jul 410
Photography of The Cabinet of Caligari, Jul 420
Photography of The Dobie Gillis Show, Oct 600
Photography of The Four Horsemen, Apr 222
Pictorial Composition—Key Element In Cine matography, Aug 487.
Pixillation—New Technique With Commercial Possibilities, Jul 412
Plotting Camera Angles With Storyboards Dec 724
Production Procedures for Animated Com mercials, Jul 415

ANNUAL INDEX

Continued from Preceding Page

Pros and Cons of 16mm Color Negative, May 300

R

Read Any Good Books Lately? Sept 548
Reel and Can Storage Rack, Aug 480
Reflectors New Look in [Fireball], Apr 232
Ride The High Country Photography of, Jul 410
Role of Cinematography at Cape Canaveral, Nov 668

S

Scotchlite Process (The), Apr 228
Semi automatic Zoom Lens Diaphragm Control Aug 474
Shoestring Movie Makers, Dec 732
Shooting 100 Documentaries in 50 Weeks, Aug 482
Shyaka —Japan's First Epic Production In 70mm, Jan 42
16mm Workprint Editing, Nov 664
Slow Motion In Television Aug 472
Small Lights For Big Jobs Nov 672
Some Aspects of Educational Film Production, Dec 741
Sound Mar 168
Streamlining Production Methods, Jan 36
Sun Gun Photo Light May 292
Superior Maneuverability in Boom Shot Photography Nov 674

T

The Face of Jesus, Photography of Apr. 230
The Four Horsemen, The Photography of, Apr 222
Time-lapse Photography of the Sky, Feb 100
Titles for Walk on the Wild Side Jun 356
Traveling Matte Systems, Sept 538
Tricky Filming For A Tricky Picture Jul 416
TV Safe Action Limits For Wide Screen Films, Jun 366
Two Continent Assignment Oct 604

U

Ultra Wide Screen Systems, Jul 424

W

What's New In Tape Recorders, Dec 738
Why Prints For TV Are Different Aug 470
Wide Screen Production Systems May 296
Wildlife Photography, Jun 365
William Daniels Re elected President of ASC, May 268
World of the Brothers Grimm Photography of, Sept 536

INDEX BY AUTHORS

B

Berridge John W
—Some Aspects of Educational Film Production Dec 741
Beyer Walter
—Progress Report on ASC's Research & Educational Committee, Jan 32
—A S C Recommendation No 7, Mar 171
—A S C Research Committee Reports, Apr 212
—A S C Recommendation No 4, May 272
Wide Screen Production Systems, May 296
—TV Safe Action Limits for Wide Screen Films Jun 366
—A S C Recommendation No 10, Nov 650
Bodger Lowell A
—Ultra Wide Screen Systems, Jul 424
Bousek Jo[illegible]
—Multi[illegible]
Production Jun 3[illegible]
Brun Jo[illegible] ASC
—Doubling In Brass Se[illegible]

C

Carter Jim
—Cinemicroanalysis Dec 728
Carey, Paddy, CSC
—Time-Lapse Photography Of The Sky, Feb 100

D

Daniels, William, ASC
—Cinerama Goes Dramatic Jan 28

E

Everett, Brian R
—The Newman Sinclair Motor driven 35mm camera Jan 38

F

Fielding, Raymond
—The Scotchlight Process Apr 228
Foster, Frederick
—The Photography of Background Plates, Feb 98
— New Look In Reflectors Apr 232
—The Sun Gun Photo Light May 292
—New Look In Film Titles, Jun 356
—Dual Camera Photography Aug 484
—Filming The Dobie Gillis Show Oct 600

H

Horrington Clifford V
— Shyaka —Japan's First Epic Production In 70mm Jan 42
—Making a Marketable Movie, Aug 477
—Photographing a 16mm Lecture Film In Japan, Oct 615
Henry, Joseph
—Multi Screen Motion Pictures, Apr 234
—Wildlife Photography Jun 365
—Slow Motion In Television Aug 472
—Superior Maneuverability In Boom Shot Photography, Nov 674
—What's New In Tape Recorders, Dec 738
Herzfeld, Richard P
—Reel and Can Storage Rack Aug 480

K

Koebner, Hans
—Light Pilot Automatic Exposure Control Feb 104
—Electronic Film Editing, Dec 730

L

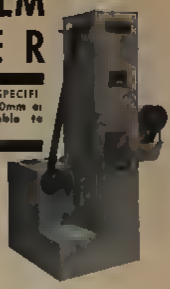
Londrum, Bill
— First Person Camera Technique Mar 170
Lightman, Herb A
—The Photography of El Cid in Technirama-70, Jan 30
—Photography of Moon Pilot, Feb 90
—Circling Italy with Circarama Mar 162
—Photographing The Four Horsemen, Apr 222
—Photographing Birdmen of Alcatraz Jun 354
—From Caligari to Caligari, Jul 420
—Cameras At The Capitol, Aug 478
—Filming The First Cinerama Feature Sept 536
—Two Continent Assignment, Oct 604
—APCS Cameramen—Eyes of the Air Force, Nov 676
—Air Force Filming Project, Dec 736
Charles Loring
—Hong Kong Filming Venture Jan 40
—Pictorial Composition—Key Element in Cinematography Aug 487

M

Metzler Paul
—Logistics of a Global Filming Project, May 298
Murphy Mike
—Moving Camera Shots On Skis, Feb 92

Continued on Next Page

ROLL FILM DRYER



BUILT TO MILITARY SPECIFICATIONS for use with 70mm or 35mm roll film—adaptable to 16mm

- Stainless Steel Construction
- Completely Automatic
- Capacity 1000 ft per hr [approx]
- Portable, Compact
- Write for free literature

Metal Masters
5599 UNIVERSITY AVENUE
SAN DIEGO CALIFORNIA

400- and 1200-foot Conversions

FINEST conversions on the market today. Convert your Auricon Cine Voice or Pro 16 to a fine camera that will handle full 400 feet of film with perfect film-tree, wow free operation. Includes Veeder Root footage counter, filter slot and holders, phone jack in camera and complete refinishing.

Quick Service . . . Finest Workmanship . . .
Mitchell or Bell & Howell Magazines
Write for Pictures and Complete Details
GORDON YOGER
PROFESSIONAL CINE PRODUCTS
2222 N Prairie Ave., Dallas 4, Texas
Phone LAkeside 1-2672

ASIA IS COVERED BY
FARKAS FILM COMPANY
424 LI PO CHUN BUILDING
HONG KONG
COMPLETE 16/MM & 35/MM PRODUCTION FACILITIES

WORK PRINTS
16mm 8-&-W 35mm
Low Cost Immediate Service
Available 24 hours a day
16mm 04c per ft 35mm 05c per ft.
16mm Color
Reversal Work Prints
.05c per ft
Academy Leaders
ASSOCIATED TELEPHOTO LABORATORY
2705 West Olive, Burbank, Calif
TH 6-7779 EM 6-1036

BOLEX ACCESSORIES
By STEVENS

SYNCHRONOUS CAMERA DRIVE

115-volt Bodine Motor 24-Frame Lip-Sync Speed Complete with Safety Clutch, Camera Mounting Base, Forward-Reverse Controls, Condenser, 10-Ft Cable

Special **$150**

Write for our Bolex Accessory Catalog

STEVENS ENGINEERING CO.
Dept "A", 340 N Newport Blvd
Newport Beach, Calif

RESEARCH COUNCIL CRANE with MOTION PICTURE TABLE

NEW, IMMEDIATE DELIVERY.

WRITE FOR PRICE

NATIONAL CINE EQUIPMENT, INC.
238 W 48th St., New York 36, N Y—Circle 6-0348

FOR THE ANSWERS . . .

to your photographic problems, refer with confidence to the new

AMERICAN CINEMATOGRAPHER MANUAL

Most comprehensive compilation of cinematographic data ever assembled between the covers of a single book Contains more than 400 pages of concise, practical and informative data and charts Invaluable to every cinematographer

There's something to help you on every page of this valuable fact-packed book! Order your copy today!

$7.50
. Post Paid

AMERICAN CINEMATOGRAPHER MANUAL
P O Box 2230 Hollywood 28 Calif

Please send me .....copies of the AMERICAN CINEMATOGRAPHER MANUAL Payment enclosed

..... Please ship C.O.D.....

Name.....

Street & No .....

City..... Zone ..... State.....

*For orders mailed within California, please add 4% sales tax

ANNUAL INDEX

Continued from Preceding Page

Murray Don
—Shoestring Movie Makers, Dec 732
Musgrave Peter
—The Dubbing of Sound Mar 168

Mc

McGill, Snuffy
—Semi automatic Zoom Lens Diaphragm Control Aug 474

N

Neff James B
—Gas Pipe Dolly Mar 164
Nykvist, Sven
—Photographing The Films of Ingmar Bergman, Oct 613

O

Ozals, Leo
—Shooting 100 Documentaries in 50 Weeks Aug 482

P

Pickens Tom
—Automation In Animation, Mar 172

R

Rider, L F
—The Alekan Gerard Process of Composite Photography, Jul 428

S

Sanders Mark
—Streamlining Production Methods, Jan 36
Scot, Dorrin
—Cinematography In The Atomic Age Feb 94
—Movie Magic for The Magic Sword, Mar 158
—The Illusion of Reality, Apr 230
—Pros and Cons of 16mm Color Negative, May 300
—Spanish Voices For Hollywood TV Films Jun 360
—Photography of Ride The High Country Jul 410
—New Ventures In Cinematography, Sept 546
—Fighting Fire With Film Oct 602
—Role of Cinematography at Cape Canaveral Nov 666
—Plotting Camera Angles With Storyboards Dec. 724
Simmons Dr Norwood L
—The New Eastman Color Negative and Color Print Films, Jun 362

W

Wilhelm, William R Jr
—Pixillation—New Technique With Commercial Possibilities, Jul 412
Waalery Adrian
—Production Procedures for Animated Commercials, Jul 415.

Z

Zeppr, Ray
—A Do It Yourself Lens and Camera Accuracy Test, Feb 102
—Tricky Filming For A Tricky Picture Jul 416

To Sell To
THE MOTION PICTURE INDUSTRY
YOU
NEED
AMERICAN
CINEMATOGRAPHER

INDEX TO ADVERTISERS

	Page
American Cinematographer Manual	764
Ansco	745
Arriflex Corp. of America	705
Associated Telephoto Laboratory	763
Bach-Auricon, Inc.	709
Birns & Sawyer Cine Equip.	746, 749
Byron	4th Cover
Camera Equipment Co., Inc.	707, 740
Camera Mart, Inc.	706, 708, 710
Capitol Film Laboratories	717
Carter Manufacturing Co.	760
Chevereau	748
Cinekad Engineering Co.	760
ColorTran Industries	755
Dupont	721
Elgeet Optical Co.	750
Forkos Film Co.	763
Film Effects of Hollywood	756
Filmline Corporation	759
Flex Electric Products, Inc.	748
Flormon & Babb, Inc.	715, 753
Jack Frost	743
General Film Laboratories	711
W. J. Germon, Inc.	2nd Cover
Hollywood Camera Co.	744
Hollywood Film Company	747
LAB-TB	722
Lloyd's Camera Exch	759
Lowell-Light Photo Engrn.	752
Magnasync Corp.	3rd Cover
Magnetic Sales Corp.	749, 751
Metal Masters	763
Micro-Record Corp.	748
Mitchell Camera Corp	714
Miller Professional Equipment	754
Mole-Richardson Company	752
Mole-Richardson European Service	727
Motion Picture Labs., Inc.	742
Movielab Film Laboratories	713
Moviola Mfg. Co.	751
National Cine Equipment, Inc.	753, 764
National Cine Laboratories	754
Pathe Products, Inc.	748
Pellegrini-Piek	758
Photomart	758
Precision Laboratories	757
Professional Cine Products	763
Charles Ross, Inc.	731
S.O.S. Photo-Cine-Optics, Inc.	716, 718, 720, 723, 757
Samuelson Film Service, Ltd.	746
Stevens Engineering Co.	764
Superior Bulk Film Co.	758
Sylvania	719
Uhler Cine Machine Co.	756
Video Film Laboratories	756
Vicom, Inc.	712
Vitatone Co.	758

MR NORWOOD L SIMMONS
EASTMAN KODAK CO
6706 SANTA MONICA BLVD
HOLLYWOOD CALIF.

editorial services
music
sound recording
screening
color developing
black-and-white developing
color printing
black-and-white printing
edge-numbering
print cleaning
magnetic striping

. . . *surprised?*

to find everything you need
to complete your film
in one convenient location,
under one roof?
That includes Byron's famed
WESTREX SOUND FACILITIES
. . . there is no better sound!

see for yourself...

or write, phone or wire
for information and
quotations on any and
all producer services.

byron / motion pictures

1226 Wisconsin Ave., N.W., Washington 7, D.C., FEderal 3-4000
Affiliated with MECCA FILM LABORATORIES CORP., 630 Ninth Avenue, New York 36, N.Y.

141406

Send application immediately for your "Maggie"

the coveted 1963 "Maggie" award...

will be bestowed upon
***all* MAGNASYNC owners or users!**

This solid gold* statuette, encased in a clear plastic container, is an original Wilkinson © design made for Magnasync by Bernad Creations, makers of the famous "Nebbish" characters.

*(Anyway it looks like gold!)

In order for you to qualify for this distinguished honour it is absolutely necessary that you

1 be an owner user of any Magnasync equipment, or
be an operator of Magnasync equipment, with a producer an industrial, educational or governmental organization,
and

2 make formal application to the "Maggie Awards Committee" by providing all information requested on application below (One application per organization, please)

MAGNASYNC
Magnaphonic SOUND SYSTEM

A dynamic new customer service program is under way at Magnasync. A service laboratory on wheels equipped with the latest test instrumentation, spare parts and new equipment for demonstration is on a continual cross-country tour.

In addition, all "Maggie" Award applicants will receive periodic mailings of valuable service bulletins describing equipment modifications and latest product and engineering developments. There is no obligation for this service.

"MAGGIE" APPLICATION

MAGGIE AWARDS COMMITTEE
Magnasync Corporation, 5546 Satsuma Ave., North Hollywood, Calif.

On behalf of myself and my company I hereby submit my application for a 1963 "Maggie" award statuette.

Name _____ Title _____
Organization _____
Street Address _____ Phone _____
City _____ State _____

I own or operate the following Magnasync equipment:

Model	Serial No	Approx purchase date	Present condition

Date _____ Signature _____